MOHENJO-DARO AND THE INDUS CIVILIZATION

MOHENJO-DARO AND THE INDUS CIVILIZATION

Being an official account of Archæological Excavations at Mohenjo-daro carried out by the Government of India between the years 1922 and 1927

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PREFACE

HITHERTO it has commonly been supposed that the pre-Āryan peoples of India were on an altogether lower plane of civilization than their Āryan conquerors ; that to the latter they were much what the Helots were to the Spartans, or the Slavs to their Byzantine overlords—a race so servile and degraded, that they were commonly known as *Dāsas* or slaves. The picture of them gleaned from the Hymns of the Rigveda was that of black skinned, flat-nosed barbarians, as different from the fair Āryans in physical aspect as they were in speech and religion, though at the same time it was evident that they must have been rich in cattle, good fighters, and possessed of many forts in which they defended themselves against the invaders. These "forts", however, were explained by Vedic scholars as being no more than occasional places of refuge—simple earthworks, that is to say, surrounded, may be, by palisades or rough stone walls ; for, seeing that the Āryans themselves were still in the village state and that their society was in other respects correspondingly primitive, it was deemed impossible that the older races of India—the contemptible, outcast Dāsas—could already have been living in well-built cities or fortresses, or in other respects have attained to a higher state of culture. Mentally, physically, socially, and religiously, their inferiority to their conquerors was taken for granted, and little or no credit was given them for the achievements of Indian civilization. Never for a moment was it imagined that five thousand years ago, before ever the Āryans were heard of, the Panjāb and Sind, if not other parts of India as well, were enjoying an advanced and singularly uniform civilization of their own, closely akin but in some respects even superior to that of contemporary Mesopotamia and Egypt. Yet this is what the discoveries at Harappā and Mohenjo-daro have now placed beyond question. They exhibit the Indus peoples of the fourth and third millenia B.C., in possession of a highly developed culture in which no vestige of Indo-Āryan influence is to be found. Like the rest of Western Asia, the Indus country is still in the Chalcolithic Age—that age in which arms and utensils of stone continue to be used side by side with those of copper or bronze. Their society is organized in cities ; their wealth derived mainly from agriculture and trade, which appears to have extended far and wide in all directions. They cultivate wheat and barley as well as the date palm. They have domesticated the humped zebu, buffalo, and short horned bull, besides the sheep, pig, dog, elephant, and camel ; but the cat and probably the horse are unknown to them. For transport they have wheeled vehicles, to which oxen doubtless were yoked. They are skilful

metal workers, with a plentiful supply of gold, silver, and copper. Lead, too, and tin are in use, but the latter only as an alloy in the making of bronze. With spinning and weaving they are thoroughly conversant. Their weapons of war and of the chase are the bow and arrow, spear, axe, dagger, and mace. The sword they have not yet evolved ; nor is there any evidence of defensive body armour. Among their other implements, hatchets, sickles, saws, chisels, and razors are made of both copper and bronze ; knives and celts sometimes of these metals, sometimes of chert or other hard stones. For the crushing of grain they have the muller and saddle-quern but not the circular grindstone. Their domestic vessels are commonly of earthenware turned on the wheel and not infrequently painted with encaustic designs ; more rarely they are of copper, bronze, or silver. The ornaments of the rich are made of the precious metals or of copper, sometimes overlaid with gold, of faience, ivory, carnelian, and other stones ; for the poor, they are usually of shell or terra-cotta. Figurines and toys, for which there is a wide vogue, are of terra-cotta, and shell and faience are freely used, as they are in Sumer and the West generally, not only for personal ornaments but for inlay work and other purposes. With the invention of writing the Indus peoples are also familiar, and employ for this purpose a form of script which, though peculiar to India, is evidently analogous to other contemporary scripts of Western Asia and the Nearer East.

To the extent thus briefly summarized the Indus culture corresponded in its general features with the Chalcolithic cultures of Western Asia and Egypt. In other respects, however, it was peculiar to Sind and the Panjāb and as distinctive of those regions as the Sumerian culture was of Mesopotamia or the Egyptian of the Valley of the Nile. Thus, to mention only a few salient points, the use of cotton for textiles was exclusively restricted at this period to India and was not extended to the Western world until two or three thousand years later. Again, there is nothing that we know of in prehistoric Egypt or Mesopotamia or anywhere else in Western Asia to compare with the well-built baths and commodious houses of the citizens of Mohenjo-daro. In those countries, much money and thought were lavished on the building of magnificent temples for the gods and on the palaces and tombs of kings, but the rest of the people seemingly had to content themselves with insignificant dwellings of mud. In the Indus Valley, the picture is reversed and the finest structures are those erected for the convenience of the citizens. Temples, palaces, and tombs there may of course have been, but if so, they are either still undiscovered or so like other edifices as not to be readily distinguishable from them. At Ur, it is true, Mr. Woolley has unearthed a group of moderate-sized houses of burnt brick which constitute a notable exception to the general rule ; but these disclose such a striking similarity to the small and rather loosely built structures of the latest levels at Mohenjo-daro, that there can be little doubt as to the influence under which they were erected. Be this, however, as it may, we are justified in seeing in the Great Bath of Mohenjo-daro and in its roomy and serviceable houses, with their ubiquitous wells and bathrooms and elaborate systems of drainage, evidence that the ordinary townspeople enjoyed here a degree of comfort and luxury unexampled in other parts of the then civilized world.

Equally peculiar to the Indus Valley and stamped with an individual character of their own are its art and its religion. Nothing that we know of in other countries at this period

bears any resemblance, in point of style, to the miniature faience models of rams, dogs, and other animals or to the intaglio engravings on the seals, the best of which—notably the humped and short-horn bulls—are distinguished by a breadth of treatment and a feeling for line and plastic form that has rarely been surpassed in glyptic art ; nor would it be possible, until the classic age of Greece, to match the exquisitely supple modelling of the two human statuettes from Harappā figured in Plates X and XI. In the religion of the Indus peoples there is much, of course, that might be paralleled in other countries. This is true of every prehistoric and of most historic religions as well. But, taken as a whole, their religion is so characteristically Indian as hardly to be distinguishable from still living Hinduism or at least from that aspect of it which is bound up with animism and the cults of Śiva and the Mother Goddess—still the two most potent forces in popular worship. Among the many revelations that Mohenjo-daro and Harappā have had in store for us, none perhaps is more remarkable than this discovery that Śaivism has a history going back to the Chalcolithic Age or perhaps even further still, and that it thus takes its place as the most ancient living faith in the world.

In many ways, the problems propounded by these discoveries are closely akin to those raised two generations ago by Schliemann's excavations in Greece and Asia Minor. When, in the Second city of Troy, Schliemann unearthed his famous treasure of gold, he jumped to the conclusion that it was part of the treasure of Priam hidden at the sack of Troy ; and when, later on, he lit upon the royal shaft graves of Mycenae, he believed, not without reason, that he had found the resting places of Agamemnon and his family. At that time none dreamt of the sea-power of Minos or the brilliant culture that had existed round the coasts of the Ægean before the coming of the Āryan Hellenes. It was reserved for later explorers to demonstrate that there were kings of Mycenae of a different race and speech before Agamemnon ; and that the second city of Ilium had crumbled to ruin long centuries before the Trojan war. The parallel that Greece presents in this matter is the more significant because in Greece, as in India, it was the happy fusion of the southern and northern races and the intermingling of their widely divergent talents that led to the splendid outburst of classic thought and art ; and the memory, moreover, of what she owed to her older population was effaced almost as effectually in Greece as it was in India. To the ancient Greeks the Iliad and the Odyssey were as much the beginning of things as the Vedas still are to Indians, many of whom may regard it as little short of impious to look beyond these venerable writings for a possible source of inspiration and knowledge.

But it is in regard to the early civilization, not of India alone, but of the whole Ancient Orient that these new discoveries seem likely to revolutionize existing ideas. The importance of the rôle played by palæolithic man in India has long been recognized, and from a typological comparison of palæolithic and neolithic artefacts the inference has been drawn that it was actually on Indian soil that the latter were first evolved from the former. Be this view correct or not, there can be no question that the north-west of India, with its vast, well-watered plains, with its abundance of game, its warm but variable climate—more propitious perhaps then than now [1]—and with its network of rivers affording ready means of

[1] See below, Chapter I.

communication and intercourse, must have offered a specially favourable field for the advancement of early society, alike when man was in the hunting stage and later when he had turned himself to agriculture and the domestication of animals or was opening up commerce with distant lands. At present, our researches carry us back no further than the fourth millennium B.C. and have lifted but one corner of the veil that hides this remarkable civilization, but even at Mohenjo-daro there are still several earlier cities lying, one below the other, deeper than the spade has yet penetrated, and though the permanent rise of the subsoil water precludes the hope of our ever being able to explore the earliest settlements on this site, it can hardly be doubted that the story already unfolded will be carried still further back on other sites, of which there are a multitude waiting to be excavated in Sind and Balūchistān. One thing that stands out clear and unmistakable both at Mohenjo-daro and Harappā, is that the civilization hitherto revealed at these two places is not an incipient civilization, but one already age-old and stereotyped on Indian soil, with many millennia of human endeavour behind it. Thus India must henceforth be recognized, along with Persia, Mesopotamia, and Egypt, as one of the most important areas where the civilizing processes of society were initiated and developed. I do not mean to imply by this that India can claim to be regarded as the cradle of civilization ; nor do I think on the evidence at present available that that claim can be made on behalf of any one country in particular. In my view, the civilization of the Chalcolithic and succeeding Ages resulted from the combined efforts of many countries, each contributing a certain quota towards the common stock of knowledge. From the Neolithic, if not from the Palæolithic Age onwards the most populated regions were undoubtedly the great river valleys of South and South-West Asia and Northern Africa, where the cold was never intense, where food and water were ready to the hand of man, where pasturage was good, irrigation feasible, and communication easy along the courses of the natural waterways. In each of these river valleys, on the banks of the Nile and the Euphrates as on those of the Kārūn, the Helmund or the Indus, mankind may be assumed to have had equal chances of development, and it is natural to suppose that progress in one direction or another was being made in all these regions simultaneously and doubtless in many others besides. If this view, which is surely the most rational one, be accepted, if we regard this wide-flung civilization of the Afrasian belt as focussed in various centres and developed by the mutual efforts of different peoples, we shall better understand how, despite its general homogeneity, it nevertheless comprised many widely differing branches, each of which, in its own sphere, was able to maintain its local and individual character.

* * * * * *

The excavations at Mohenjo-daro described in these two volumes were carried out in five winter seasons between 1922 and 1927, and preliminary accounts of most of the work done have already appeared in our Departmental Reports. These preliminary accounts, however, were necessarily brief and were compiled perforce at the close of each season, before the excavators themselves had had time fully to digest their materials. For this reason and in view of the world-wide interest awakened by these discoveries it seemed to me desirable to co-ordinate the results of these first five years and to publish as complete a record of them

as is at present practicable, but the reader must understand that these volumes do not claim to be other than provisional. In the nature of things it could not be otherwise. We are engaged in opening up an entirely new chapter of civilization. Our task is but just beginning. Fresh materials are coming to light almost daily, and our horizon, therefore, is insensibly changing. In such conditions any approach to finality is out of the question. With our facts and figures—and these are the backbone of these volumes—we are on firm ground. They may be relied on to stand the test of time. But facts and figures are not everything. They need to be effectively interpreted, and this can only be accomplished effectively when our knowledge of this period is much fuller than at present. Let me add, too, parenthetically, that it can only be accomplished, now or in the future, by specialists conversant with the subject in all its bearings. I cannot refrain from stressing this point here, because the antiquities from Mohenjo-daro and Harappā already figured in the pages of our Departmental Reports have been made the subject of much nonsensical writing, which can be nothing but a hindrance in the way of useful research. It was my anxiety to ensure that the exploration of Mohenjo-daro and the publication of these valuable materials should lack nothing which expert knowledge could supply, that decided me three years ago to enlist for our work here the help of a specialist in Mesopotamian Archæology, the intimate bearing of which on our Indus Culture had become abundantly clear. By a stroke of good fortune I was able to secure the services of Mr. Ernest Mackay, well-known for his excavations at Kish and Jemdet Nasr, and an archæologist of long experience in Egypt and Palestine as well. To this officer my debt in regard to these volumes is a particularly heavy one ; for to him has fallen the task, necessarily very laborious and exacting, of describing not only the bulk of the minor antiquities, but a substantial share of the monumental remains as well. Other collaborators in this publication to whom I take this opportunity of tendering my grateful thanks, are :—Mr. Hargreaves, Officiating Director General of Archæology in India, and his Deputy for Exploration, Rai Bahadur Daya Ram Sahni, who have furnished descriptive accounts of the excavation work done by them in the seasons 1925–6 and 1926–7 respectively ; Mr. Sidney Smith, Inspector of Antiquities in Mesopotamia, and Mr. C. J. Gadd, of the British Museum, who have together compiled the elaborate Sign-Manual reproduced in Plates CXIX–CXXIX and contributed illuminating notes on the mechanical nature and on some external features of the Indus writing ; Professor S. Langdon, of Oxford, who has supplied another important chapter on the same perplexing subject of the writing ; Mr. M. Sana Ullah, Archæological Chemist in India, who has made most of the chemical analyses and, in Chapter XXV, has dealt with the sources and metallurgy of copper and its alloys ; Mr. A. S. Hemmy, lately Principal of the Government College at Lahore, who has investigated the systems of weights and measures ; Col. R. B. Sewell, Director of the Zoological Survey of India, and his colleague Dr. B. S. Guha, who have made an exhaustive examination of the animal remains ; and Sir Edwin Pascoe, Director of the Geological Survey, and Mr. A. L. Coulson of the same Department, who have performed the same service in regard to metals and minerals.

To Mr. A. J. Turner of the Indian Central Cotton Committee and his colleague in the Technological Laboratory, Mr. A. N. Gulati, I am also much indebted for their careful

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Three other scholars whose names I cannot pass over in silence, are the late Mr. R. D. Banerji, to whom belongs the credit of having discovered, if not Mohenjo-daro itself, at any rate its high antiquity, and his immediate successors in the task of excavation, Messrs. M. S. Vats and K. N. Dikshit. The valuable work accomplished by each of these officers in turn is already widely known and will be still further apparent from the pages of these volumes, but no one probably except myself can fully appreciate the difficulties and hardships which they had to face in the three first seasons at Mohenjo-daro or the pluck and enthusiasm with which they overcame them.

Finally, and as a postcript to the above, which was written more than a year ago, let me add how much indebted I am to Mr. T. K. Penniman of Trinity College, Oxford, for the great care he has taken in compiling the Index to these volumes, and to Mr. Arthur Probsthain, the Publisher, for his unremitting interest in the work as well as for much practical help.

JOHN MARSHALL.

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ABBREVIATIONS

ASI.	*Archæological Survey of India.*
Arch. Mem. or *Mem. ASI.*	*Memoirs of the Archæological Survey of India.*
ASR.	*Annual Report of the Archæological Survey of India.*
ASWI.	*Archæological Survey of Western India.*
Ant. Journ.	*Antiquaries Journal.*
BSA.	*British School at Athens.*
CAH.	*Cambridge Ancient History.*
CHI.	*Cambridge History of India.*
Ency Brit.	*Encyclopædia Britannica.*
ERE.	*Encyclopædia of Religions and Ethics.* Edited by J. Hastings.
Grund. d. indo-ar. Phil.	*Grundriss der indo-arischen Philologie und Altertumskunde.*
IA.	*Indian Antiquary.*
ILN.	*Illustrated London News.*
Imp. Gaz.	*Imperial Gazetteer of India.*
JA.	*Journal Asiatique.*
JAOS.	*Journal of the American Oriental Society.*
JASB.	*Journal of the Asiatic Society of Bengal.*
JBORS.	*Journal of the Bihar and Orissa Research Society.*
Jour. Eg. Arch.	*Journal of Egyptian Archæology.*
JRAI.	*Journal of the Royal Anthropological Institute.*
JRAS.	*Journal of the Royal Asiatic Society.*
Mém. Dél. Perse	*Mémoires de la Délégation en Perse.*
Min. Mag.	*Mineralogical Magazine.*
NH. or *Nat. Hist.*	*Naturalis Historia.*
Obv.	Obverse.
OECT.	*Oxford editions of Cuneiform Texts.*
Palæo. Sin.	*Palæontologia Sinica.*
Proc. A.S.B.	*Proceedings of the Asiatic Society of Bengal.*
RA. or *Rev. Ass.*	*Revue d'Assyriologie.*
REC.	*Recherches sur l'origine de l'écriture Cunéiforme*, par Thureau-Dangin.
Rec. Ind. Mus.	*Records of the Indian Museum.*
Rev.	Reverse.
Rv.	Rigveda.
Zeit. für Ethn.	*Zeitschrift für Ethnologie.*

CHAPTER I

THE COUNTRY, CLIMATE, AND RIVERS [1]

THE richest grain-lands of Sind in the days before modern irrigation were the broad plains of Lārkāna between the Indus and the Kohisthān or Kīrthar hills. Nowadays their fertility is much enhanced by the network of artificial canals and protective "bands" along the banks of the river, but, even without these, this tract must always have been an exceptionally productive one, since it was watered not only by the main stream of the Indus but by the long and winding loop that now functions as the Western Nāra Canal, as well as by a multitude of other natural waterways and lakes that take the drainage of the western mountains. Round Lārkāna itself the country is known as the Garden of Sind, and compared with many parts of the Province it may well be likened to a garden. At the best, however, the term is a relative one. For in spite of its natural advantages, there are still many patches of salt wilderness or stretches of unreclaimed jungle interrupting the cultivation. **Natural fertility of district round Mohenjo-daro.**

It is in this district and in one such small patch of barren land that Mohenjo-daro, the "Mound of the Dead", is situate. It stands on what is known locally as "The Island"—a long, narrow strip of land between the main river bed and the Western Nāra loop, its precise position being 27° 19′ N. by 68° 8′ E., some 7 miles by road from Dokrī on the North-Western Railway, and 25 from Lārkāna town. The mounds which hide the remains of the ancient city, or rather series of cities (since there are several of them superimposed one upon the other) are conspicuous from afar in the riverine flat, the highest of them, near the north-west corner, rising to a height of some 70 feet, the others averaging from 20 to 30 feet above the plain. The actual area covered by the mounds is now no more than about 240 acres, but there is little doubt, as we shall presently see, that floods and erosion have greatly diminished their extent, and that the deep alluvium deposited by the river has covered all the lower and outlying parts of the city. Floods, too, and erosion, accelerated by the extreme aridity of the climate, have worked much havoc in the mounds that have survived, cutting them up into hillocks, furrowing their sides, and widening and deepening the long depressions that mark the lines of the ancient streets. The salts also which permeate the soil of Sind have hastened the decay of the site. With the slightest moisture in the air, these salts crystallize on any exposed surface of the ancient brickwork, causing it to disintegrate and flake away, and eventually reducing it to powder. So rapid is their action that within a few hours after a single shower of rain newly excavated buildings take on a mantle of white rime like freshly fallen snow. The desolation that thus distinguishes this group of mounds is shared by the plain immediately around them, which for the most part is also white with salt and sustains little besides the dwarf tamarisk and the babul, the camel-thorn, and tussocks of **Situation and extent of site.**

[1] A map of Sind and Balūchistān, showing the prehistoric sites discovered up to date, will be found in the pocket at the end of this volume.

Climate and rainfall.

coarse *kanh* grass. Add to this that the climate of the locality is one of the worst in India; that the temperature ranges from below freezing point to 120 degrees Fahrenheit; that there are bitterly cold winds in winter, frequent dust storms in summer; that the average rainfall is not more than 6 inches, but occasionally (as in 1929) varied by torrential downpours; that clouds of sandflies and mosquitoes increase the discomforts of life—and it will be found hard to picture a less attractive spot than Mohenjo-daro is to-day. Nevertheless, it would be wrong to assume that the conditions now prevailing were necessarily the same five thousand years ago, when Mohenjo-daro was a flourishing city. On the contrary, there are reasons for believing that both the climate and physical aspects of the country have undergone material changes since then. Thus, that the rainfall used to be substantially heavier than it is at present, may be inferred from the universal use of burnt instead of sun-dried bricks for the walls of dwelling houses and other buildings. From the earliest times at Mohenjo-daro with which we are as yet acquainted, its builders were just as familiar with sun-dried as with kiln-burnt bricks, and habitually employed the former for foundations and infillings, wherever they were protected from the elements. Had the climate been as dry and the rainfall as scanty as it is to-day, it can hardly be doubted that they would have used sun-dried bricks (which are far cheaper than burnt ones) in exposed parts of the buildings as well, just as builders use them to-day, not only in Sind but in every other arid country of the Orient. Another piece of evidence bearing on the same point is furnished by the class of animals engraved on the seal amulets (Pls. CIII to CXVI). Apart from cattle and fabulous creatures, these animals are such as are commonly found in damp, jungly country—namely, the tiger, rhinoceros, and elephant; the lion, which notoriously prefers a dry zone, is conspicuous by its absence.[1] Unfortunately, none of this evidence is decisive. It may be argued, and fairly so, that the poorer kinds of houses have not yet been excavated in the earlier strata; that, so far as the later ones are concerned, the materials for them were obtained by dismantling the older structures belonging to the wealthier classes; and that the use of kiln-burnt in preference to sun-dried bricks signifies nothing more than the prevailing opulence of the city. Similarly, it can be maintained that the many house and street drains which are such a conspicuous feature at Mohenjo-daro, were designed to carry off only the refuse-water of the houses, not rain-water at all; and that, had they been intended for the latter, the receptacles into which they discharge, if not the drains themselves, would necessarily have been more capacious. Then, again, as to the animals on the seals, it is true no doubt that the tiger, rhinoceros, and elephant are found as a rule in moister regions, but the tiger is still occasionally shot in Sind, while the elephants portrayed on the seals may have been tame ones imported from other districts. Taken by itself, therefore, none of these pieces of evidence from Mohenjo-daro can be regarded as conclusive. But, taken collectively, they certainly point to a heavier rainfall than Sind enjoys to-day, and this inference is corroborated by the climatic changes that can be shown to have taken place in the neighbouring districts of Balūchistān. Luckily, the facts in regard to the latter region are indisputable. At spot after spot in Southern Balūchistān, in the midst of desert wastes where there is either no water at all or only enough to sustain a handful of nomads, Sir Aurel Stein found the remains of large and once flourishing settlements belonging to the prehistoric age. Of these remains I shall have more to say anon in connection with the westward diffusion[2] of the early Indus

Climatic changes in neighbouring districts of Balūchistān.

[1] The only representation of lions, if indeed they are lions, either at Mohenjo-daro or Harappā is that on the small sealing figured in Pl. XII, 12, where two lions appear as "genii", conceived perhaps as officiating at a sacred ceremonial. Cf. pp. 52 and 70.

[2] Cf. pp. 96 ff. *infra*

culture. Here it is sufficient to draw attention to three points only in regard to them. The first is that the immense and laboriously constructed dams or *gabr-bands*, as they are locally called, which are a distinctive feature of many of these settlements and which were intended for the holding-up and storage of water, would have been as useless as they are to-day, unless the rainfall had been substantially heavier. On the other hand—and this is the second point—these same dams would have been entirely superfluous if the rainfall had been a reasonably ample one and distributed more or less evenly over the whole year, as it now is, for example, in Northern Europe. It was only because the rainfall was deficient that they were needed at all. The third point is that much of the desiccation of Balūchistān must have taken place at some period between the Chalcolithic Period, when the population was comparatively dense and settled, and the fourth century B.C., when Alexander the Great made his disastrous march back through the deserts of Gedrosia, and when its condition must have been as parched and barren as it is to-day. Indeed, from the terrible picture of this area which is painted by Arrian and other historians of Alexander, there can be no room for doubt that the general desiccation of the country had been accomplished some centuries at least before Alexander traversed it, and this conclusion is borne out by Arrian's statement, based on the authority of Nearchos, about the losses sustained by Semiramis and Cyrus when they attempted a similar feat ; for, whatever the truth behind that story, it is evident that in popular tradition Gedrosia had long been regarded as impracticable for the passage of armies.[1] So far, then, as Balūchistān is concerned, we are on perfectly safe ground in affirming that in the Chalcolithic Age—the age to which most of these prehistoric remains are to be assigned—the rainfall of that country, though by no means a heavy one, was substantially in excess of what it is now; in other words, that it was in the neighbourhood of, say, 15 to 20 inches *per annum* ; and it will accord with the evidence at present available from Mohenjo-daro if an approximately equal rainfall is assumed for Sind. But whether in other respects the same climatic conditions prevailed in both these areas and whether the desiccation that subsequently overtook them is attributable to the same causes, are questions that must still remain open.

Possible causes of climatic changes.

A theory that has won some acceptance among climatologists[2] is that during the last glacial and post-glacial periods the northern storm belt was deflected by Arctic pressure further south, with the result that the Atlantic rainstorms, which now pass over Central and Northern Europe, then passed over the Mediterranean and Northern Africa and gradually expended their energy over what is now the dry belt of Southern Asia, but not before they had reached the Indo-Gangetic plains. According to this theory, the Sahara and Egypt at one time enjoyed a climate as damp and variable as Central Europe does to-day, and the now desiccated countries further east—Arabia, Mesopotamia, Persia, Balūchistān, and Sind—though not quite so favoured, nevertheless came in for a relatively bountiful rainfall more or less evenly distributed throughout the year. Northern India, be it said, is still affected by the winter storms that traverse the Mediterranean to Syria and Palestine, and it has therefore been inferred that Northern India received ampler and more frequent rain before the storm belt had shifted northward. This theory is certainly an attractive one, the more so because it links together climatically all the countries, from the Atlantic to the Indus, that are comprised in the Afrasian dry zone, and furnishes a simple but not inadequate explanation of how these countries, which are now largely barren wastes, may once have been densely populated. So far, however, as the theory applies to Sind, it is not a convincing

[1] Aurel Stein, *An Archæological Tour in Gedrosia* (Mem. Archl. Survey of India, No. 43), p. 11.

[2] Cf. Ellsworth Huntington, *Civilization and Climate* ; V. Gordon Childe, *The Most Ancient East*, chap. ii.

one, since it takes no account of the gradual shrinkage that has been going on in the area affected by the south-west monsoon or of the obvious likelihood of the valley of the Indus having once been included in that area. For that the monsoon has, in fact, even in recent centuries, extended over tracts that are now untouched by it, is attested by the evidence of history. Thus, Moslem writers up to the close of the fourteenth century A.D. frequently allude to the rainy seasons in the Multān Province, which is now well within the dry zone, though it occasionally feels the force of cyclonic storms travelling westward from the head of the Bay.[1] Again, it must have been this same retreat of the south-west monsoon that produced the devastating dryness which in modern times has overtaken the plains of Sibi to the south-west of Quetta and converted lands that were once green and well cultivated into a howling wilderness.[2] Seeing, then, that in the case of both Multān and Sibi, the cause of recent desiccation is to be found, not in the failure of the westerly rain-storms, but in the withdrawal of the monsoon towards the north and east, it is not unreasonable to infer that, at a still earlier date, the monsoon may have withdrawn from the lower valley of the Indus and the deserts to the east of it, and that its withdrawal may account, in part at any rate, for their desiccation. In this connection Dr. C. W. Normand, Director of the Indian Meteorological Department, writes as follows[3]: "Sind and Balūchistān are alike in being arid regions, but differ from one another in respect of the time of incidence of their scanty rainfall. In Sind (and some neighbouring portions of Balūchistān also) rainfall occurs chiefly during the monsoon. Over the greater part of Balūchistān, however, the season of greatest rainfall is winter. These facts are shown in the following table :—

		Normal rainfall	Rainfall in very wet season.	Rainfall in very dry season.
Sind	Winter .	1	2½ (1911)	0 (1921)
	Monsoon .	5	17 (1913)	1 (1918)
Balūchistān	Winter	5½	10 (1911)	¾ (1921)
	Monsoon .	2	5 (1917)	½ (1918)

"In this table the winter season covers the months November to April, while the monsoon is from June to September. The table also contains data of the total rainfall in abnormally wet and abnormally dry seasons respectively. It is immediately obvious that, if one is called upon to explain a past rainy age in Sind, it is more reasonable to do so by postulating a change (and, judging from 1913, not a very great change) in the monsoon conditions ; a very much greater change in meteorological conditions is required to explain a copious rainfall in winter, unless a change in the orography of Sind's surroundings is simultaneously postulated.

"So far as Balūchistān is concerned, one may imagine either a more rainy winter or a more rainy monsoon than at present, but preferably the former. In Balūchistān a dry winter is one in which the winter depressions from the west are inactive. Westerly winds are a normal feature of the upper air circulation over Balūchistān in both dry and wet winters. Sometimes, for some unknown reason, these westerly winds carry with them active disturbances, which produce a wet season, as in 1911; sometimes they carry equally numerous but inactive depressions, as in the dry winter of 1921.

[1] Cf. *Imperial Gazetteer of India* (Prov. Series), Panjab, vol. i, p. 14; and Major H. G. Raverty, "The Mihrān of Sind and its tributaries," *JASB.* vol. lxi (1892), pp. 281, 282, 417, etc.

[2] Cf. Raverty, loc. cit., pp. 312–13, n. 312, where he quotes from the *Ārāish-i-Mahfil* and the history of Mir Ma'sūm of Bakhar.

[3] I quote from a personal letter.

"On the whole, if one is to put forward one single explanation for heavier rain in the past in both Sind and Balūchistān (especially South Balūchistān), it is much simpler on meteorological grounds to seek that explanation in a more abundant monsoon in these areas."

Independently of these considerations we must also not forget that in neither Egypt nor Mesopotamia is there any evidence to show that during the Chalcolithic Age the rainfall was substantially heavier than it is at present. On the contrary, the universal use of sun-dried brick in exposed buildings—to say nothing of other facts pointing in the same direction—is proof positive that the climate has altered little in those countries during the last five or six thousand years. We shall do well, therefore, to hesitate before assuming that the pluvial theory alluded to above explains the changes that have taken place in Sind since the Chalcolithic Age.

Changes in the river system of Sind.

I have dwelt at the outset on this question of climate because of its intimate bearing on many of the problems that confront us at Mohenjo-daro. Another hardly less important question concerns the river system of the Sind Valley. At present Sind is watered by the Indus alone with its affluents and branches. This was not so always. Twelve centuries ago, when the Arabs first came to Sind, there were two great rivers flowing through the land: to the west, the Indus; to the east, the Great Mihrān,[1] also known as the Hakrā or Wahindah. Of these two rivers the eastern one seems to have been the more important. What precisely were their courses in successive periods, and in what manner they were connected or independent one of the other, are questions that have been much debated without any reliable conclusions being reached. Major Raverty, the foremost authority on the subject, concluded that at the time of the Arab invasion the main channel of the Great Mihrān followed a line roughly coincident with the existing Eastern Nāra canal, which was once an important river bed.[2] According to him the terminal course of the Indus, which flows by Mohenjo-daro, was then a subsidiary branch of the Mihrān, but its course was not the same as at present. The Mihrān itself, he held, was the chief channel by which the rivers of the Panjāb[3] found their way to the sea. Whether conclusions as sweeping as these are justified on the data available is doubtful. One thing, however, may be regarded as certain—and this is the one that mainly concerns us here—viz. that throughout the Mediaeval Period and up to the middle of the fourteenth century there were two large rivers instead of one, flowing in parallel courses to the sea, and that these two rivers divided between themselves the vast volume of water from the five rivers of the Panjāb, as well as from the old Ghagghar and Chitang to the east.[4] Whether in the three thousand years that elapsed between the Chalcolithic Age, when Mohenjo-daro was a flourishing city, and the coming of the Arabs, these rivers underwent as many changes as during the last twelve centuries, we have no means of knowing.

[1] The name Mihrān, however, appears to have been applied also on occasion to the present Indus. Cf. Cousens, *Antiquities of Sind*, p. 5; Raverty, p. 297; *Ain-i-Akbari* translation by Blochmann, Jarrett, vol. ii, p. 327.

[2] I.e., it passed close by the city of Alor, thence flowed south for some 90 miles and swept eastward in a curve which carried it west of Umarkot, and so to the Rann of Cutch (then an estuary of the sea) and by the Kori Creek to the Arabian Sea. Cf. Raverty, op. cit., pp. 156–508. On the other hand, Mr. Cousens is of opinion that at the time of the Arab invasion the Mihrān, which he identifies with Raverty's Kumbha, was flowing from north to south between the Alor hills and the present line of the Indus in a course which took it by the walls of Mansūrah. Cf. his *Antiquities of Sind*, p. 5 and Pl. CIII.

[3] Including the Chitang, Ghagghar, and Sutlej on the east, the Beās, Rāvi, Chinab, and Jhelum in the centre, and the Indus on the west.

[4] How precisely they divided this volume of water, and whether the main waters of the Indus flowed into the Mihrān, as Raverty supposes, or followed approximately their present course, as seems more probable, are open questions into which we need not enter here.

It is worthy of remark, however, that, according to Major Raverty, the transfer of the Sutlej from the Hakrā to the Beās, the drying up of the Hakrā itself, and perhaps also the breaking away of the Indus from the Mihrān, resulted from the terrific storm floods which in the middle of the fourteenth century A.D. overwhelmed the whole country between the Sutlej and the Chināb.[1] If this was so, there is no need to assume that such a catastrophe was anything but exceptional or that others of a like magnitude had occurred in earlier ages. On the other hand, it is well known that all these rivers are subject to constant fluctuations and changes owing to causes which have always been in operation, notably the violence of the floods to which they are exposed, the unresisting nature of the alluvium through which they cut their way, and their general tendency, like that of all rivers in the northern hemisphere, to "west", that is, to erode their right banks rather than their left. Thus, even under modern conditions of control, there is hardly a year that passes without some alteration in their courses; and, so far as Upper and Middle Sind are concerned, it is probably not too much to say that there is hardly a square mile of their alluvial plains over which the Indus or Mihrān has not at some time or other flowed. This being so, it would manifestly be idle to speculate on the precise courses which the one or other of these rivers followed in the third or fourth millennium B.C. Nevertheless, the existence of the two important Chalcolithic sites of Mohenjo-daro and Jhukar, the one in the near vicinity of the Indus, the other of the Western Nāra loop, warrants the presumption that in this district the course of the river was not very different five thousand years ago from what it is now, since it is highly improbable that cities such as these would have been established elsewhere than on or near the banks of an important waterway.

The Indus and Mihrān in relation to Mohenjo-daro.

We may picture, then, the Sind valley with its twin rivers and their affluents as no less green and fertile in that remote period than it was in the days of Alexander the Great, when the territories of Mousikanos were described as the most flourishing of all that the Greeks had seen in India, or than it was two centuries earlier still, when Sind and the Panjāb were reputed the richest and most populous of all the Satrapies of the Achæmenid Empire. And because the waters of its many affluents were then partly diverted into the Mihrān, we may visualize the Indus as flowing by Mohenjo-daro in less formidable volume than it does at present—a river that could have been kept in bounds without such vast embankments as have become necessary in recent centuries, and that in normal years could be counted on to rise and inundate, without devastating, the surrounding country. Our picture, however, would be wrongly drawn if we imagined Mohenjo-daro free from the havoc of floods; for if there is one fact that stands out clear and unmistakable amid these ruins, it is that the people must have lived in ever-present dread of the river. Then, as now, the Indus was the source of fertility and wealth; on its annual inundation depended in a great measure the crops; on it also the commerce and life of the city.

Danger of inundation.

But if it was a beneficent giver, it might equally become the author of desolation and ruin. That this was so is shown by the pains which the builders of Mohenjo-daro have taken to provide their edifices with præternaturally solid basements and to raise them aloft on artificial terraces which time and again were heightened in order to place them out of reach of the floods. In recent centuries and until the river was put under control, the plains of Lārkāna were annually inundated by a great deluge which

[1] Cf. Raverty, op. cit., pp. 391–2. Raverty, whose authority is the *Khulāsat-ut-Tawārikh*, suggests that these floods may have been one of the reasons for Firūz Shāh's canals in the Firūzah-Hisār District. It is a remarkable fact, which has not hitherto been noticed, that this catastrophe in the Panjāb synchronized with a period of unprecedented storms and floods in Europe, America, and Central Asia. For the latter, cf. Ellsworth Huntington, *Civilization and Climate*, pp. 236–8.

burst the right bank of the river between 20 and 30 miles above Sukkur and found its way south to the Manchhār Lake and so back, by the Aral River, to the Indus.[1] In earlier days, when the river was smaller, we may suppose that it overflowed its banks more gently and spread its waters more gradually over the face of the country, as it does in the Delta to-day. Even so, however, it must frequently have happened that the river came down in abnormal flood, bursting its banks and, in spite of artificial earthworks (if such existed), carrying ruin far and wide.[2]

Rise of Indus bed and of alluvial plain.

Nor was it only against these occasional deluges that the people of Mohenjo-daro had to provide. They were faced, as the centuries passed, by the fact that the bed itself of the Indus was steadily being raised by the vast volume of silt that the river brings down,[3] and that with it was being raised also the level of the adjacent plains. The process was slow but relentless. Each annual inundation might raise the level of the ground by only the fraction of an inch ; nevertheless, in the course of a few generations, the danger of flooding from this cause would be a very real one. The way in which the river has spread its alluvium over the whole expanse of plain is well demonstrated by the discovery of ancient brick remains nearly 30 feet below the present surface of the ground. The particular stratum to which these remains belong has not yet been established ; but presuming them to be between 4,000 and 5,000 years old, the average rate of deposit would work out at less than a foot a century. This computation, however, cannot be regarded as reliable ; for, on the one hand, the remains in question may be more modern thar is presumed ; on the other, the rate at which the alluvial deposit was formed may have been substantially more rapid when the Indus was a slower moving river and silt consequently was accumulating more quickly on its bed.

[1] Cf. *Gazetteer of the Province of Sind*, vol. A, p. 5.

[2] The violent floods of this year (1929) and the havoc caused by them have afforded a striking, if terrible, illustration of the dangers which must always have threatened the dwellers in the Indus Valley, even though the river may not have been as turbulent then as now.

[3] The amount of silt carried down by the river at Sukkur during the monsoon season is calculated at nearly a million tons a day.

Chapter II

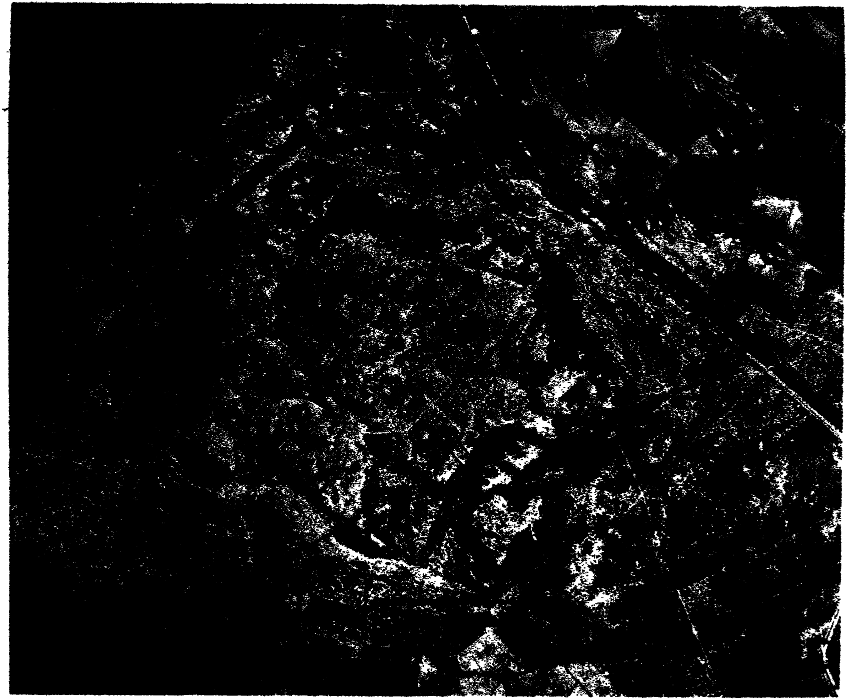
THE SITE AND ITS EXCAVATION[1]

Configuration of mounds and alignment of ancient thoroughfares.

ORIGINALLY, the site of Mohenjo-daro must have been much more extensive than it is to-day and have formed a more closely connected whole, but water and wind, aided by the action of salt in the soil and the extreme aridity of the climate, have combined to eat deeply into its sides and carve deep furrows and hollows through its middle, leaving only here and there mere fragments of the later cities. For the most part the hollows thus formed bear no relation to the configuration of the ancient structures or to the lay-out of the city. They are solely the result of haphazard erosion, their contours reminding us of some jig-saw puzzle ; but a noteworthy exception to this general observation is the lateral depression (designated " East Street " in the plan) which cuts across the site from east to west between the VS and HR Areas. Our excavations in these two areas have shown that this long, straight depression was one of the main thoroughfares of the city. Crossing it, again, at right angles is another long but apparently less important street (" First Street " in the plan), which traverses both the HR and VS Areas from south to north and continues right through to the north of the site, where it has been picked up again in Mr. Mackay's recent diggings. From these two long streets, as well as from the short sections of others disclosed in other parts of the site, it is evident that the city was intersected by long straight or approximately straight thoroughfares mainly oriented north to south or east to west ; and it is natural to suppose that one of these thoroughfares—perhaps the most important of them all—ran north to south through the broad depression which divides the Stūpa Mound from the rest of the site, in a line parallel with First Street and connecting at right angles with East Street. The depression in question was thought by Mr. Banerji, the first excavator of Mohenjo-daro, to be the ancient bed of a river ; but no evidence has yet been found to confirm this view. Originally, as I conceive it, this depression was nothing more than a thoroughfare like East Street ; but lying, as it did, north and south it came in for the full force of the countless floods which once swept down from the north and which must have gone on widening and deepening the depression until it reached its present form. East Street, on the other hand, being protected along its whole length by the flanking mounds on its north, would not suffer in the same way ; and the lesser streets and lanes, which were artificially raised from time to time, would ordinarily have been beyond the reach of flood water. In other ancient Indian cities that I have excavated I have commonly found that the main thoroughfares were substantially lower than the buildings alongside of them, the explanation being that, while the level of the latter was for one reason or another frequently raised, the public thoroughfares, and particularly the more important ones, did not keep pace with them. At Mohenjo-daro, owing to the ever present menace of inundation, the process

Relative levels of streets and adjacent buildings.

[1] A plan of the site, along with a map of Sind and Balūchistān, will be found in the pocket at the end of this volume.



The Site of Mohenjo-daro from the air.



The Excavations at Mohenjo-daro from the air.

S

of level-raising went on more rapidly, or at any rate the effects of it are now more apparent, than on most Indian sites, not only in the buildings but in the lanes and smaller streets as well, where from time to time much labour was expended on laying the drains at higher and higher levels. Thus it came about that, in the later periods of occupation, there was a considerable drop at the points where many of the lanes debouched on the side streets, and another drop where the latter joined the main thoroughfares.

Extent of ancient city and position of its walls.

What extent of ground was covered by this city at successive periods has yet to be determined. On the east and north of the mounds traces of ancient occupation, in the shape of low tumuli or prehistoric potsherds strewn over the face of the plain, can be seen for a space of half a mile or thereabouts, and to a lesser distance on the west and south; but whether these areas were once included in the city proper or were merely parts of its extra-mural suburbs is uncertain. One thing, however, that is clear beyond question is that the existing mounds have been greatly reduced in size by the incessant erosion of their sides, and that the ancient city, therefore, must once have extended well beyond their existing limits. This being so, it follows that, if the city walls ever stood on ground higher than the present level of the plain, they must inevitably have perished. Mr. Mackay has suggested that the city may not have been provided with walls at all, but personally I see no sufficient reason at present for this supposition; nor, on the other hand, do I think that the walls of the later cities have necessarily been destroyed; for, assuming that up to the time of its zenith Mohenjo-daro went on steadily expanding, its centre would naturally continue to occupy the elevated ground formed by earlier settlements, while its outlying parts would overflow further and further on to the plain below. We do not, of course, know if this process of expansion continued up to the latest periods of its occupation. Probably it did not. In the three last strata of remains there are abundant signs of decadence, and it is more than likely that the city was then shrinking in size and importance. But, however this may be, it is clear that any fortifications it may have then possessed, would have stood, not on the rising ground in the heart of the city, but on the then level of the plain, which appears to have been some 25 to 30 feet below its present level; and, this being so, it is by no means improbable that remains of them may yet be found beneath the deep alluvium.

Rise of subsoil water and difficulty of excavating lower levels.

Unfortunately, the excavation of this lower ground is likely to be rendered very difficult, if not entirely prohibited, by the height to which the subsoil water has now risen. According to the season of the year, this height varies from 20 or 30 feet below the surface in the hottest months to within a few feet of it during the monsoon; but in the winter season, when excavations alone are feasible, the water comes within some 15 feet of the surface; in other words, it is now 10 to 15 feet above the ground level of 5,000 years ago.

Stratification of remains and sequence of periods corresponding with them.

Before I close these general observations on the site, it remains to add a few words about its stratification. Between the level of the subsoil water and the summits of the mounds our excavations have disclosed not less than seven strata of remains.[1] Of these seven strata, however, we have found that the three latest are distinguished from their predecessors by increasing signs of decadence in the size and construction of the buildings, and that in some areas, though not in all, there is also a well defined break between the remains of the third and fourth strata from the top, as if the city had been reduced to ruin at that time and

[1] I say "not less", because we cannot in every case be sure of the identity of particular strata in one quarter of the site with those in another. Even in the same area the buildings of any given stratum were not uniformly destroyed or reconstructed at one and the same time. Within, let us say, a space of two centuries some may have been rebuilt only once, others twice, others three times; and on each of these occasions their ground floor levels may have been raised to varying heights. It is obvious, therefore, that, as the excavations progress, it may be found that the strata already exposed in the several areas represent more than seven successive periods, and that others may yet have to be added to them.

remained in that condition for an appreciable period before being rebuilt. Of the seventh stratum only a very small extent has been uncovered, but, so far as can be judged at present, the distinction between this and the sixth stratum is more than usually marked. Provisionally, therefore, we have divided these seven strata into three major Divisions or Periods. The first of these, which we term the "Late Period", comprises the 1st, 2nd, and 3rd strata; the second, which we term the "Intermediate Period", comprises the 4th, 5th, and 6th strata; while the third, which we term the "Early Period", is for the present represented only by the seventh stratum, though, as the digging proceeds lower, there is no doubt that earlier strata still will be unearthed. Thus, "Late II" corresponds with the second stratum, "Intermediate III" with the sixth, and so on. These major and minor divisions have for the present been determined exclusively by the stratification of the structural remains, not by the antiquities found in them. Some of the strata, it is true, are associated with certain classes or types of antiquities. Thus the polychrome pottery, for example, which is illustrated in Pl. LXXXVII, 2, has hitherto been found only in the Late Period, and it may reasonably be inferred, though the evidence is not yet conclusive, that it was unknown in the earlier periods. But, as a rule, the minor antiquities at Mohenjo-daro exhibit so little variation in type, that it is hardly possible to discriminate those of one stratum from those of another, and this difficulty of discrimination is all the greater because up to 1927 our labours were mainly directed to the excavation of the surface remains, and nearly all the earlier strata which we had then opened up were in areas where erosion had already denuded the surface of later remains, but where, as a result of this erosion, many small objects appertaining to the later strata must have found their way into the débris of the earlier buildings beneath.

Disparity of levels.

It is not, of course, to be assumed by the reader that the levels of the seven strata or of any one of them are uniform throughout the site. If we ever succeed in penetrating down to the oldest settlement, we shall no doubt find that it stood on the dead level of the then existing plain, but, as successive settlements rose on the ruins of their predecessors, it must necessarily have happened that the surface became more and more uneven. Thus, as I pointed out above, the outskirts of the city must long have been on lower ground than its centre; while even at its centre the levels of contemporary buildings or groups of buildings show great disparity. To cite but one example of this: at the beginning of Intermediate III Period, i.e. between strata 6 and 7, an immense artificial terrace of unburnt brick and clay was raised on what afterwards became the site of the Buddhist Stūpa and Monastery, the effect of which was to elevate the buildings of the 6th and later strata in this area some 22 feet above the corresponding buildings round about them. It will therefore be clear to the reader that, though the particular depth of a given stratum below datum level may be, and frequently is, an index to its relative date, it is by no means invariably so.

Story of the excavations.

The story of the excavation of Mohenjo-daro may quickly be told. The site had long been known to district officials in Sind, and had been visited more than once by local archæological officers, but it was not until 1922, when Mr. R. D. Banerji started to dig there, that the prehistoric character of its remains was revealed. This was not greatly to be wondered at; for the only structures then visible were the Buddhist Stūpa and Monastery at the north-west corner of the site, and these were built exclusively of brick taken from the older ruins, so that it was not unnatural to infer that the rest of the site was referable to approximately the same age as the Buddhist monuments, viz. to the early centuries of the Christian era. Indeed, when Mr. Banerji himself set about his excavations here, he had no idea of finding anything prehistoric. His primary object was to lay bare the Buddhist remains, and it was while engaged on this task that he came by chance on several seals which he recognized at once as belonging to the same class as the remarkable seals inscribed with legends in

Mr. Banerji's discoveries in 1921-2.



Mohenjo-daro before excavation: the foreground is the north end of the Stupa mound. looking east.

an undecipherable script which had long been known to us from the ruins of Harappā in the Panjāb. As it happened, the excavation of Harappā itself had at my instance been taken up in the year previous by Rai Bahadur Daya Ram Sahni, and enough had already been brought to light to demonstrate conclusively that its remains, including the inscribed seals, were referable to the Chalcolithic Age. Thus, Mr. Banerji's find came at a singularly opportune moment, when we were specially eager to locate other sites of the same early age as Harappā. Mr. Banerji himself was quick to appreciate the value of his discovery, and lost no time in following it up. In the first place, he deepened his digging on the east side of the Buddhist monastery, as well as at two or three other points in the same precincts, so as to get at whatever stratigraphical evidence might be obtainable, and he then proceeded to attack two other mounds in the near vicinity—one (Site II of the plan) on the headland north-west of the Buddhist Stūpa and due north of the Great Bath ; the other (Site III) isolated on the low ground at the foot of the north-east corner of the Stūpa mound. With the hot season rapidly approaching, Mr. Banerji's digging was necessarily very restricted, and it is no wonder, therefore, that his achievements have been put in the shade by the much bigger operations that have since been carried out. This does not, however, lessen the credit due to him. His task at Mohenjo-daro was far from being as simple as it may now appear. Apart from the discoveries at Harappā, which he had not personally seen, nothing whatever was then known of the Indus civilization. The few structural remains of that civilization which he unearthed were built of bricks identical with those used in the Buddhist Stūpa and Monastery, and bore so close a resemblance to the latter that even now it is not always easy to discriminate between them. Nevertheless, Mr. Banerji divined, and rightly divined, that these earlier remains must have antedated the Buddhist structures, which were only a foot or two above them, by some two or three thousand years. That was no small achievement ! Naturally, some of his conclusions have required modification—it could hardly have been otherwise—but in the main they have been proved by our subsequent researches to be remarkably correct.

For another reason also Mr. Banerji's work at Mohenjo-daro is deserving of special recognition ; for it was carried through in the face of very real difficulties, due in part to lack of adequate funds, in part to the hardships inseparable from camp life in such a trying climate. With the comfortable quarters for the officers and staff which I took steps to have erected at Mohenjo-daro between 1925 and 1927, excavation there has become a very much easier and more pleasant task than it was in the first three seasons, when Mr. Banerji and his successors were living under canvas. The fact that two out of these three officers—Messrs. Banerji and K. N. Dikshit—completely broke down in health before their labours were finished, is proof enough of the many privations they had to endure.

Work continued by Mr. M. S. Vats in 1923-4

During the two following seasons attention was, at my request, concentrated on the opening of trial trenches across the main group of mounds to the east. In the first of these seasons (1923–4) Mr. M. S. Vats, who had temporarily relieved Mr. Banerji as Superintendent in Western India, sank two long trenches—one north to south and the other east to west—across the VS Area. His work, unfortunately, was hampered by continued shortage of funds, and it was only at a very few points that he was able to expand the digging and clear some of the structures disclosed. Nevertheless, he accomplished enough to demonstrate that this quarter of the site was occupied, right up to the surface, by remains of the Chalcolithic Age, and that these remains consisted mainly of the houses of the well-to-do classes. He also established the fact that there were several distinct strata of remains lying one below another down to the level of the subsoil water.

and by Mr. K. N. Dikshit in 1924-5.

In the next season (1924–5) Mr. K. N. Dikshit happily had more labour at his command, and was able to continue this trenching work on a bigger scale. The trenches which

he dug were all in the DK Area to the north-east of the VS Area. They comprised a series of short trenches in the mounds A, B, and C, and the longer ones lettered D and E, the last of which cuts right across the northern part of the mounds from east to west. Besides sinking these trenches, Mr. Dikshit also partially cleared several of the more important buildings or groups of buildings through which these trenches cut, and recovered a large number of minor antiquities, including some of the most valuable that Mohenjo-daro has yet produced. Preliminary accounts of his and Mr. Vats' discoveries have already appeared in the *Annual Reports of the Archæological Department*, with a number of illustrations, some of which are not reproduced in these volumes.[1]

Operations extended by Sir John Marshall in 1925-6.

By the time these trial diggings were finished, we had ample evidence that Mohenjo-daro was a site of exceptional promise, where the excavator could get back at once to the Chalcolithic Age, without the toil and expense of removing later accumulations, and where he would be sure of finding well-built structures and other remains in a reasonably good state of preservation. It was clear to me, however, that if we were to excavate this site on a scale compatible with its importance, we must be prepared to launch a much more ambitious campaign than had hitherto been feasible. Fortunately for my ideas, the discoveries which had already been made here, coupled with those at Nāl, Harappā, Taxila, Nālanda, and other sites, were now rousing such widespread interest that there was little difficulty in persuading Government to agree to a more liberal programme and to accord permission to my concentrating for a season at Mohenjo-daro as many of my officers and their assistants as could be spared from Northern and Western India. My reasons for seeking this permission were not merely that the campaign of excavation which I had in view would demand a very much increased staff, but that it was already becoming evident that the Indus culture represented at Mohenjo-daro extended over a very wide area, including Sind and the Panjāb, if not other large tracts to the east and west; and I was anxious that the officers on whom would fall the task of following up this civilization, should have this opportunity—an opportunity not likely to recur—of collaborating together on one and the same site and of familiarizing themselves with the newly found antiquities as well as with the most up-to-date methods of excavating and preserving them. The officers assembled for this purpose were Mr. H. Hargreaves, then Superintendent of the Frontier Circle; Mr. M. S. Vats, Mr. K. N. Dikshit, Mr. B. L. Dhama, Assistant Superintendent in Rājputānā and Central India, and Mr. Sana Ullah, our Archæological Chemist. This controlling staff enabled me to employ effectively a body of from 1,000 to 1,200 labourers. These I divided into four groups: one to work under Mr. Hargreaves on the HR Area, a second under Mr. Vats on the VS Area, a third under Mr. Dikshit in the DK Area, and the fourth under my personal supervision with the help of Mr. Dhama and of my Excavation Assistant from Taxila, Mr. A. D. Siddiqi, on the northern half of the Stūpa mound. In the course of the season Mr. Hargreaves excavated all that part of the HR Area which lies to the east of First Street, together with the street itself and a strip of the buildings on its west—as much of this area, that is to say, as is described by him in these volumes; Mr. Vats expanded his previous trench-digging and cleared both A and B Sections, with the exception of those buildings which lie to the east of First Street and a few at the southern fringe of B Section[2]; Mr. Dikshit returned to the scene of his former labours on mounds B and C, and opened out the groups of buildings shown on Pls. LXI and LXII; while I myself unearthed the Great Bath and other blocks of buildings in the SD Area, and explored as far as was possible

Staff of officers and division of work 1925-6.

[1] For references, see footnote [2], p. 13.

[2] The extent of Mr. Hargreaves' digging is shown in the plan published in *ASR*. 1925–6, pl. xxiii, and of Mr. Vats' digging, *ibid.*, pl. xxvi.

the earlier remains beneath and around the Buddhist monastery. My primary object in all these areas was to clear the uppermost strata down to such depth only as might be practicable, without having recourse to dismantling. The later remains are of such interest in themselves and generally so well preserved, that I was most reluctant to remove any part of them for the purpose of penetrating the earlier strata underneath, at any rate until we had had ample time for their study and could be sure that we were removing nothing of vital importance. This same principle was again adhered to by Rai Bahadur Daya Ram Sahni in the succeeding year, and explains why up to the close of 1926–7 relatively little stratigraphical evidence was recovered.[1]

Construction of road and offices and survey of site.

Besides carrying out these extensive operations in 1925–6, I was also able, thanks largely to the interest taken in the work by Sir Leslie Wilson—then Governor of Bombay—to get a serviceable road made to Mohenjo-daro from the Railway Station at Dokri, and—which was more important still—to erect adequate offices, workrooms, and quarters, and a small museum for the housing of antiquities. Accurate plans of the site were also prepared under my direction by Mr. A. Francis, of the Survey of India, on a scale of 100 feet to the inch, with contours at 5 feet intervals. These plans have been used in compiling the general but more simplified site plan which accompanies this volume.

Appointment of whole-time officer for Mohenjo-daro.

From the foregoing it will be observed that up to the close of 1925–6, the operations at Mohenjo-daro had been directed by four successive officers, each of whom had multifarious other duties to perform and could give only a limited part of his time to the work each season. This frequent change in the direction of the work was manifestly a weakness, but it was a weakness which up to then it had not been possible to avoid. In the interest, however, of continuity and the systematization of results, it seemed to me eminently desirable that an officer should be placed in charge who could concentrate his undivided attention on this task, and, as there was no one in the Archæological Department who could be permanently spared for this purpose, I determined, if possible, to get an archæologist from outside with a first-hand knowledge of prehistoric excavations in Sumer and Western Asia. As already stated, I was peculiarly fortunate in being able to secure the services of Mr. Mackay. As Mr. Mackay, however, was unacquainted with local conditions in Sind or the ways of Indian administration, it was not possible for him to assume immediate direction of the work. In the winter season of 1926–7, therefore, it was arranged for him to work under Rai Bahadur Daya Ram Sahni, an excavator of wide experience in India, and between them they added two important plots to those already excavated, the Rai Bahadur devoting himself mainly to the HR and VS Areas, Mr. Mackay to the L Area in the Stūpa mound. In the HR Area the former officer took up the work begun by Mr. Hargreaves in the previous season and cleared most of the ruins west of First Street, while in the VS Area he rounded off Mr. Vats' excavations on the south and cleared some more buildings on the east side of First Street. In L Area Mr. Mackay was responsible for the excavation of the entire group of ruins as they stand at present.

Work of Rai Bahadur Daya Ram Sahni and Mr. E. Mackay 1926-7.

Descriptive accounts of excavations contributed to this publication.

It was a pity that for the purposes of this publication arrangements could not be made for each of the excavators to contribute the description of his own discoveries. Preliminary accounts of most of the work done have already appeared in the Annual Reports of the Archæological Department,[2] and in the case of HR and L Areas Mr. Hargreaves, Rai

[1] Since 1927–8 Mr. Mackay has been carrying on the systematic exploration of the lower strata in the DK Area.

[2] Cf. *ASR*. 1923–4, pp 51–2, and pls. xvii (c) and (d), xviii, and xix, 1–7; 1924–5, pp. 63–73, and pls. xvi–xxiii; 1925–6, pp. 72–98, and pls. xvi–xlvi; 1926–7, pp. 51–97, and pls. x–xix

It is to be regretted that Mr. Vats' contribution to the Report for 1922–3 was so meagre, and still more that Mr. Banerji was unable, owing to the breakdown in his health and other causes, to give an account of his operations in the Report for 1921–2.

Bahadur Daya Ram Sahni, and Mr. Mackay have each contributed a chapter describing the results of their digging. It was not possible, however, either for Mr. Vats or for Mr. Dikshit to collaborate in these volumes. Accordingly the excavations done by the former in the VS Area have been described by Rai Bahadur Daya Ram Sahni, and those done by the latter in the DK Area by Mr. Mackay. Mr. Mackay has also contributed a description of the Great Bath and neighbouring buildings discovered by me in 1925–6, while I am myself responsible for the chapter on the Stūpa Area and earlier ruins beneath it, which were partly explored by Mr. Banerji in 1922–3, partly by myself in 1925–6. The remains brought to light by Mr. Banerji in Sites 2 and 3, to which allusion has been made above, are not dealt with in the present publication, for the reason that their clearance had not proceeded far enough for any tangible conclusions to be reached. They will be reserved, therefore, for a later volume, when their excavation is more complete. Let me add that in writing the chapter on the Stūpa Area I have had access to a lengthy manuscript article by Mr. Banerji describing the results of his labours at Mohenjo-daro in 1922–3. This article not being suitable for inclusion in this work, the author of it was authorized by Government to publish it, if he so wished, independently.

Chapter III

THE BUILDINGS

ANYONE walking for the first time through Mohenjo-daro might fancy himself surrounded by the ruins of some present-day working town of Lancashire. That is the impression produced by the wide expanse of bare red brick structures, devoid of any semblance of ornament, and bearing in every feature the mark of stark utilitarianism. And the illusion is helped out, or perhaps rather the comparison is prompted, by the fact that the bricks themselves of which these buildings are composed are much of a size with modern English bricks, but differ conspicuously from any used during the historic period in India. This workaday appearance of the buildings and signal absence of decoration is the more remarkable, because Indian architecture is notorious for the rich exuberance of its ornament, and the art of brick carving itself was developed to a wonderful pitch as far back even as the Gupta Age. It may be, of course, that originally there was ornament in plenty but that it was confined to the woodwork only, and has, therefore, inevitably perished. The wood-carver's craft was one of the most ancient in India, and nowhere did his skill show itself more than in the fashioning of architectural members into appropriate shapes and the embellishing of them with pleasing devices. We know, moreover, from the evidence of the fires which consumed many of the Mohenjo-daro buildings, that wood must have been freely used in their superstructures, and we cannot, therefore, ignore the likelihood that they were just as effectively decorated as the early rock-cut temples, for example, which for the most part were replicas of wooden structures, or as those half-timbered houses and temples which are portrayed in the reliefs of the Early Indian School. For the present, however, we must take the Indus buildings as we find them, and not assume the existence of ornament of which there is now no visible proof. **Absence of decoration.**

If, however, these buildings were destitute of embellishment, they more than atone for their plainness by the excellence of their construction. This subject of construction is discussed in detail by Mr. Mackay in Chapter XVI, and here I shall do no more than note its most salient features. Crude brick was well known to the builders of Mohenjo-daro, but was never used, as it was in Mesopotamia and Egypt, in the exposed parts of buildings. It was reserved for foundations or for the packing of terraces and the like, where it could not be affected by the elements. Walls above ground—both exterior and interior—were built of burnt brick laid in mud or in mud and gypsum mortar combined. The latter material, however, is not found as an exclusive binding agent in any masonry ; it serves occasionally for surface pointing or is distributed here and there in the hearting of walls or at the corners of buildings, in order to consolidate and strengthen them. Sometimes, but only very rarely, lime is used in combination with gypsum for lining the interior of water channels. **Excellence of construction and materials used.**

In the smaller structures exterior walls usually had a vertical outer face ; in larger **Walls.**

buildings, a battering one. The inner faces were invariably vertical, and these might be covered with clay plaster or brought to a fine finish by rubbing down the bricks, as was done in mediaeval and modern times in India[1]; or they might, again, be relieved by panels or recesses, such as those in House XIII of the VS Area.[2] The remarkable massiveness which distinguishes many of the walls was proportioned to their height[3] and the weight they had to support, but in part also it was necessitated by the constant danger of floods.

Foundations. The quality of the foundations varied greatly. In the larger buildings of the Intermediate Period they were carried to a great depth and laid with much care. In smaller structures they were shallower, but were commonly bedded on a layer of burnt clay nodules, which in this alluvial country had to take the place of broken stone. In many of the poorer class dwellings, on the other hand, particularly of the Late I Period, the foundations were laid on almost any kind of débris and, needless to say, have almost invariably given way.

Floors. Floors were made of brick either flat or on edge, the latter method being almost invariable in the case of bathrooms and common wherever the flooring was exposed or subjected to excessive wear and tear.

Doorways and windows. Ground-floor chambers, which alone have survived at Mohenjo-daro, received their light and air generally through doorways, but occasionally through interior windows as well, such as those in House XIII of the VS Area or in the Great Bath.[4] Windows in the outer walls were rare and sometimes took the form of mere slits, but there may have been other windows higher up which have been destroyed. **Lintels and arches.** It is probable that both doorways and windows were generally spanned by flat wooden lintels, but corbelled arches were also used for these as well as for other purposes, such as the covering of drains. The true arch does not appear to have been known. **Stairways.** Stairways leading to the upper storeys are universal, the treads generally, though not always, being steep and narrow.

Wells. Most buildings of any size had wells of their own—admirably built of burnt brick and usually circular in plan, but in one or two instances, oval. Wells for public use are sometimes provided in private houses with an entrance to the well-chamber direct from the street.[5] **Fireplaces.** With the exception of three somewhat doubtful examples,[6] there are no fireplaces at Mohenjo-daro.

Bathrooms and drains. Two specially characteristic features of these buildings are their bathrooms and drains. The former are invariably well paved and usually connected with the street drainage system. In private houses they appear to have been located on the upper as well as on the ground floor. Horizontal drains are ordinarily constructed of brick; vertical ones, which were provided for the upper storeys, of terra-cotta pipes with closely fitting spigot and faucet joints, either protected by brickwork or let into the thickness of the walls. **Rubbish chutes and dustbins.** Rubbish chutes or flues descending from the upper storeys were also constructed in the thickness of the walls and were sometimes provided on the outside with a bin which could be cleared by scavengers from the street.[7] Besides these private dustbins, public ones were provided at convenient spots at the sides of the streets,[8] and street drains were constructed with as much care as private

[1] I do not share Mr. Mackay's opinion that the bricks were sawn for this purpose. The process is too laborious.

[2] Cf. p. 21 *infra* and Pl LXIII, *a*.

[3] Battering walls would, of course, have to be correspondingly thicker at the base.

[4] For House XIII, VS Area, see *infra*, p. 20 ff, and Pls. VI and LV, *c*; for the Great Bath, p. 24 ff. and Pl. VII. The fenestrated walls in the latter are almost equivalent to pillars and intercolumniations.

[5] E g, in House V, HR Area, Section A.

[6] Viz, in House IX, Block 2, House XXIII, Block 5; and House LV, Block 7—all in HR Area, Section B. See pp. 195, 202, and 209 *infra*.

[7] E g., in House VI, HR Area, Section A. See p. 181 *infra*.

[8] E g, in Deadman Lane, HR Area, Section A. See *infra*, p 179.

ones. Indeed, there are unmistakable signs on every hand that the question of conservancy was one of prime concern to the civic authorities, and, seeing how much attention was given to the matter of drainage, it is not a little surprising to find that the street drains merely discharged into soak-pits [1] in the open thoroughfares, and that no attempt was made to carry them outside the limits of the town.

Roofs. Roofs, as a rule, were probably flat and were carried, like the ceilings below them, on stout timbers covered with planking and beaten earth, with a protective course of brick, matting, or other material between. It must not, however, be taken for granted that they were invariably flat. No remains of tiles, slates, copper, or brass roof coverings, such as were common in later times, have yet been found, but it is not improbable that corbelled spires of brick may have crowned some of the buildings; for the excessively strong foundations and massive walls of the latter suggest that they were designed to carry proportionately high superstructures, and these superstructures might well have taken the form of the corbelled *śikhara*. This, however, is merely a surmise, which there is no tangible evidence to substantiate, though, in trying to revisualize the picture of this architecture, we must not forget that, as far back as Hindu architecture can be traced, the *śikhara* has been its most characteristic feature ; that, when the *śikhara* comes upon our horizon in the early mediaeval age, it is already fully developed and must clearly have had a long antecedent history ; and that its form is the natural resultant when brick or stone corbelling is used for the roofing of a square or rectangular chamber.[2]

Three classes of buildings. The buildings thus far exhumed at Mohenjo-daro fall into three main classes, viz. (1) Dwelling houses ; (2) Buildings whose purpose has not yet been determined ; (3) Public baths which may have had either a religious or secular character.

Dwelling houses, large and small, occupy most of the excavated areas in the eastern mounds, but with them here and there are certain edifices of the second class, which may prove to have had a sacred character. The public baths are situated on the Stūpa mound, and here also are a number of exceptionally well built residences and other structures, including a notable Hall in L Area, all of which may conceivably have had a religious character.

Dwelling houses. The houses varied much in size. The smallest, such as Nos. XXXIII to XLVII of HR Area, Section B, Block 5, which may have been intended for menials' quarters, have no more than two rooms ; the largest, like HR V, Block 2, and XVIII, Block 4, are on a scale that entitles them to be ranked almost as palaces.[3] In order to give the reader as graphic an idea as possible of the average upper class house, I have had two examples drawn out in oblique projection.[4] One of these is No. VIII of HR Area, Section A, Block 3 ; the other is No. XIII of the VS Area, Section A, Block 2.

House VIII of the HR Area, Section A. The former (Pls. IV and XLV, *a*) has a frontage of 85 feet and a depth of 97 feet.[5] Its surrounding walls are 4 to 5 feet in thickness and have a slight batter on the outside. Against its east and west sides other houses have been built. This is unusual. Party walls are common enough at Mohenjo-daro, but the general practice is for them to be furnished by each attached house in succession. Thus, in the present

[1] Where the fluids would soak into the soil and the residue would be removed as often as necessary by the town scavengers. These soak-pits are not so effective in disposing of the fluids as the later soak-wells in use at Taxila and elsewhere in historic times, but they had the advantage of being accessible for cleaning, whereas the soak-well slowly became choked up and was then filled in and another opened elsewhere.

[2] See *infra*, p. 22.

[3] We must not, however, exclude the possibility of these great edifices having been temples. See *infra*, p. 22.

[4] Done, under my personal supervision, by my surveyor, Mr. S. Mukherji.

[5] For further particulars of House VIII, see Mr. Hargreaves' description at pp. 182–3 *infra*.

instance, if House VIII furnished, as it did, the party wall for its neighbour on the west, it should by rights have made use in turn of the party wall provided by its neighbour on the east. As a fact, however, House VIII was older than its neighbours, and was not only a complete structure in itself, but more solidly built than any of them.

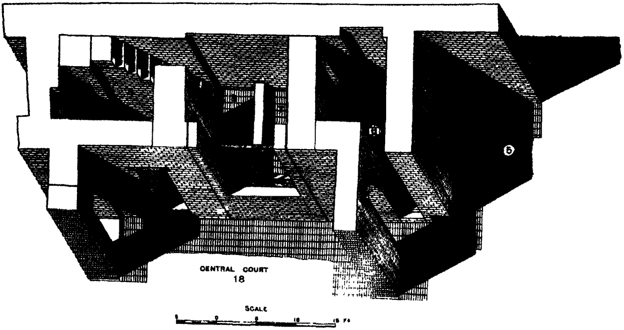
The front of the house was towards a quiet lane leading off from First Street, and the entrance on this side was more than usually broad. Originally it measured nearly 10 feet across, but was afterwards narrowed to 7 ft. 6 in. by the insertion of an extra pier against the east jamb. No. 5 is the entrance hall, in the north-west corner of which, opposite the entrance, is the porter's lodge (*5a*), with a doorway almost as wide as the chamber itself, so that there might be no possibility of the occupant being hidden from view. The walls of the entrance hall were finished in clay plaster, a large patch of which still adheres to the western wall. It is about $\frac{3}{4}$ in. thick, and composed of mud and chopped grass, finished off with a finer wash of clay. This plaster has been half converted into terra-cotta by the fire which destroyed the house, and it is due to this circumstance alone that this specimen of plaster has been preserved.[1] Had the building not happened to have been burnt down, all trace of the plaster would have perished, as it has perished in most of the houses at Mohenjo-daro.

To the right of the porter's lodge a short passage led to the central courtyard of the house (18), which was open to the sky and provided light and air to the rooms grouped about it on both the ground and upper floors. And here, let me say parenthetically, that the principle of the open court encompassed by chambers was just as fundamental to house-planning at Mohenjo-daro as it was throughout the rest of prehistoric and historic Asia, and as it has continued to be in India until the present day. In House VIII the courtyard measures approximately 32 feet square, but the square is not a true one. Like other open courtyards, it was paved with brick and provided with a covered drain. The latter ran from north to south in front of Chambers 11, 12, and *12a* (see Pl. XXXIX), and communicated at its northern end with a vertical drain let into the wall of Chamber *12a*, and at its southern with another vertical drain which appears to have descended from the upper storey in Chamber 9.[2] But a strange thing about this drain is that it discharged, not, as was usually the case, into one of the street drains, but into a moderate sized earthenware vessel sunk beneath the courtyard pavement in front of Room II. That this receptacle was intended to take the whole discharge from the vertical pipes which served the upper storey, is perfectly clear from the slope of the courtyard drain itself, which falls from both directions towards the vessel. The point is of interest, because it is evident that in this house at any rate the main drain was not intended to carry off either the bath water from the upper or lower floor, or rain-water from the roof. Indeed, it seems as if it was meant to serve the upstairs privies only, the vessel into which it discharged being cleared as often as was necessary and the contents conveyed by hand to one or other of the street drains or soak-pits.

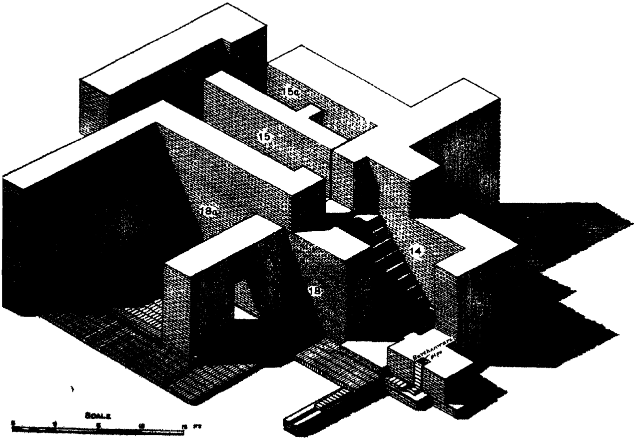
Of the rooms which encompass the courtyard, No. 6 (at the S.W. corner) contains a well and is entered up three steps from the passage near the vestibule. Its paved floor is 2 ft. 6 in. above the courtyard level and there is an aperture between it and the bathroom (7 and 8), large enough to permit of small vessels being passed through. Possibly a wooden conduit was also inserted here for conveying the well-water direct into the bathroom. The latter, which is on the same level as the well-chamber, was divided into two by what appears

[1] The same phenomenon is observable in several other houses at Mohenjo-daro, as it is also in the monasteries of Jauliān at Taxila.

[2] There are some remains of a second drain, running beneath the east wall of Chamber *18a*, but this drain clearly belongs to an earlier structure.



a) Oblique projection of southern chambers in House VIII, from north.



b) Isometric projection of steps in House VIII.

to have been a low kerb, probably no more than 6 or 8 inches high, though too little of it now remains for its height to be determined with certainty. As usual, the floor was well paved and surrounded by a low edging of brick. A hole through the wall on the south side served as an outlet for water, which flowed into the street drains in High Lane. On the opposite side of the bathroom (i.e. on the side towards the courtyard), was a wooden window, perhaps of lattice-work, the charred remnants of which were still adhering to the brick framing when it was first excavated. Such a window would be a special convenience when the bathroom was used, as doubtless it often was, for household washing, as it would enable clothes, etc., to be passed direct in and out from the courtyard (Pl. V, *a*). Just how the entrance to the bathroom was contrived is uncertain owing to alterations made during the lifetime of the building, but it seems as if there must originally have been three steps leading up to it from Room 9, the floor of which was on the same level as the courtyard and therefore below the bathroom floor, though subsequently this entrance was blocked up and a new flight of steps provided descending from the upper floor. This arrangement is found in several other buildings at Mohenjo-daro, and had the advantage of permitting the inmates to go direct from their bedrooms upstairs to the bathroom.

Rooms 10 to 13 on the east side of the court are all small, and were no doubt intended for menials.[1] What purpose Room 18*a*, on the north side of the court, served, is doubtful, but it is not unlikely that it was the kitchen, since there must have been a kitchen on the ground floor, and this is the only room that would have been suitable.[2] The other remaining apartment on the ground floor (No. 17), with a curious passage on two sides, would have made a convenient guest-chamber, since, while it was more or less isolated from the rest of the house, there was ready access to it from the entrance hall. The ceiling of this room, which was unusually low (less than 7 feet above the floor), was carried on rafters of deodar (*Cedrus deodara*) and *dalbergia sissoo*,[3] the charred ends of which were found still imbedded in the walls.

The living and sleeping rooms of the family were all on the upper floor, which was reached from the courtyard by way of the staircase 14 (Pl. V, *b*).[4] One of them (No. 16) and the passage-ways 15 and 15*a*, are raised up on a solid basement, in order to provide against the menace of floods, the idea being to have at least one fair-sized room where the family could find refuge if the rest of the house collapsed. The remainder of the upstairs rooms were disposed round about the central courtyard, following, no doubt, the same plan as the rooms below, but with a projecting balcony overhanging the courtyard from which the several rooms could be entered. That timber was freely used in the construction of the upper floor was evident from the abundance of charcoal among the débris and from the fact that the fire which destroyed the house was fierce enough to fuse the surface of some of the walls.[5]

As stated above, the roof of this, as of most other buildings, was probably flat, and

[1] In Rooms 10, 11, and 12 the door jambs were rebuilt in antiquity, and it is noteworthy that gypsum mortar was used in the later as well as in the earlier brickwork.

[2] Whether Room 18*a* was open in front as shown in the drawing or closed by a light wall or lattice screen, there is no means of determining.

[3] *Dalbergia sissoo* is a local timber, which grows abundantly in the dry riverine tracts of Sind. Its presence here suggests, though it does not prove (since the timber might have come from elsewhere), that the climate of Sind was not vastly different then from what it is to-day. Deodar grows in the Himalayas at an average altitude of between 6,000 and 8,000 feet, and was probably floated down the Indus and its affluents to Mohenjo-daro.

[4] In the drawing on Pl. IV a subsidiary staircase from the outside is shown in the N.W. corner of Room 16. This second staircase is conjectural, this corner of the room being in a ruined condition.

[5] E.g., on the right-hand door jamb of Chamber 12.

served as a terrace whereon the inmates of the house could sleep or take the evening air. I conjecture that the stairway leading to it was in the passage 15*a*, though all traces of the steps have vanished.

House XIII of the VS Area. House XIII in the VS Area[1] has a more elaborate plan than the preceding. On its ground floor are four fair-sized courts, ten smaller rooms, three staircases, a porter's lodge, and a well-chamber. The front is towards First Street, and here there are three entrances side by side, the principal one of which is plainly the middle, since this is the only one provided with a porter's lodge. Besides these three front entrances there is a small doorway alongside the well at the rear of the house, which seems to have been originally open, but was subsequently bricked up. The positions of these entrances and of the ground floor rooms are clearly shown in the oblique projection on Plate VI and in the plan on Plate LIII. Entering the house by the main door one finds oneself in a small vestibule (68), with the porter's lodge on the left and a second doorway directly opposite leading to the open Court 67. A feature of the porter's lodge worth observing is the way in which the east wall has been built obliquely across it, so that the porter would be compelled to sit in full view of the entrance. The arrangement is at once clever and practical, and shows, like many other features, that the architect must have given a good deal of thought to the planning of this house.

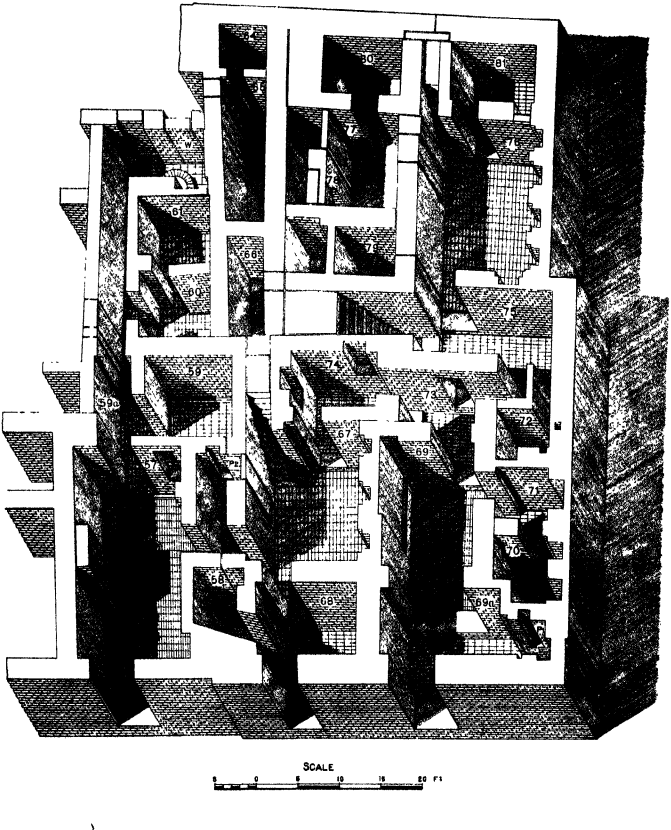
The Court 67, on the west side of which one of the three flights of steps ascends to the upper storey, must have been open to the sky, as it had to supply light and air to the chambers adjoining. On its south side is a broad brick pier, evidently intended for the support of the upper floor, the passage round which (P 2) was originally open, but later on closed at one end and converted into a closet. Opposite to this, on the north side of the court, are three ornamental panels or recesses, designed, like those in the Hall 76, to relieve the bareness of the walls.[2]

To the left and right of this court (67) are two other courts, one (No. 57) with its door communicating direct with First Street, the other (No. 69) with a small vestibule (69*a*) intervening between it and the street entrance. Of these two courts, 57 is the larger, measuring just under 25 feet in length, and is distinguished from the other courts in that it has a floor of brick-on-edge in which are two shallow depressions, probably intended for store-jars to stand in. Brick-on-edge is also used for the floor of the adjacent room 59, between which and the Court 57 is a large window. Seemingly this part of the ground floor constituted the kitchen and storeroom, but we cannot regard this as a certainty; nor are we sure whether the Court 57 was roofed over or not. The brick pier against the face of the party wall on the south (which belongs to the adjoining house) looks as if it was meant to carry a roof, and the two depressions in the floor also point to the same conclusion, since it is unlikely that store-jars of any kind would have stood in the open. On the other hand, the window between 57 and 59 was evidently meant to admit light from the former to the latter, just as the similar window in Room 73 was meant to admit light from the Court 69 to the Room 75. Perhaps the truth of the matter is that Court 57 was roofed over its western half only, its eastern half being left open to the sky.

[1] For further particulars of this house and of the antiquities found in it, see Chap. XIV, pp. 218–19.

[2] Mr. Mackay is of opinion that these and other like wall-recesses were air-shafts, his idea being that they were boarded over to within a foot or two of the bottom, and that by means of wind-scoops on the roof the air was forced down into the court or chamber. This idea is not shared by any of the other excavators. Air-shafts are, of course, a common feature of modern Sindhi houses, but, so far as my personal experience goes, are quite unlike these sunk panels, which remind one of the ornamental panelling so familiar in Indo-Moslem architecture. From such panels I need hardly say that I distinguish the many small wall-recesses which, like those in ancient and modern Indian houses, served as convenient niches for lamps, vessels, and other small articles.

VS. Area.



Oblique projection of House XIII, from east.

The other apartments on this side of the house, which are reached from the passage 59*a*, comprise the well-chamber at the far end and two other small rooms, which we may safely presume were for menials. Crossing to the other side of the house, there are two smallish rooms (70 and 71) leading off from the Court 69, which for a time may have served as guest-chambers, but were subsequently bricked up and filled in solid as a precaution, no doubt, against floods. The tiny apartment 72, next to them on the west, was a latrine, from which a drain ran across the north side of the courtyard 68 to a soak-pit in First Street, while in the wall of the latrine is the brick casing for a vertical pipe which descended from what was doubtless another latrine on the upper floor. From its small size it is clear that this vertical pipe was meant to convey fluid only, not solids ; and this seems to be true of most of the house drains in Mohenjo-daro, notwithstanding that in one case at least, viz. in House XLIX of HR Area, Section B, Block 7, privies with seats (as to the character of which there can be no question) are directly connected with brick drains of the usual type, which must therefore have been designed for sewage of any kind, solid or fluid.[1]

Leading from the Courtyard 69 into Room 73 is a more than usually wide doorway, and directly opposite, on the other side of 73, a large window, through the former of which light was admitted into Room 73 and thence through the latter into the lobby 75, where the main staircase goes to the upper floor—all of which affords another illustration of very practical planning on the part of the architect.

Of the small Hall 76, which is entered from the further side of the Lobby 75, a conjectural reconstruction is sketched in Pl. LXIII, *a*. Its north and east walls are relieved by a series of ornamental recesses with single reveals, to which allusion has already been made. On the floor of the hall were found several fragments of alabaster trellis-work, which I conjecture to have come from clerestory windows high up in the south wall. On this side there was a solid terrace, some 10 feet in height, abutting on to the hall, and windows with pierced lattice screens could, therefore, have been easily contrived in the upper part of the wall, as suggested in the sketch. At the further end of this hall is the third and much narrower stairway leading to the upper floor, and alongside it another small room, above the doorway of which there was probably some sort of fanlight.[2]

All the remaining rooms on the ground floor, viz. Nos. 64, 65, 66, 77, 78, 79, 80, and two unnumbered ones alongside 78 and 79, belonged to an older edifice, and were bricked up and filled in to form a solid terrace at the time when House XIII was built. In all except the smallest dwellings at Mohenjo-daro a certain portion of the ground floor invariably took the form of a terrace or plinth sufficiently high and strong to resist the floods which annually menaced the city ; and in the making of these terraces advantage was naturally taken, wherever possible, of pre-existing structures, the rooms of which could be filled with brick or débris at very little cost. In this particular house the terrace thus constructed was some 25 × 30 feet, and quite large enough to support two or three fair-sized chambers where the family could take refuge if the other parts of the house showed signs of collapsing. To imagine that all the upper apartments were confined to such terraces and that the architects made the latter solid, because they knew no other way of adding a second storey, is entirely fallacious. The architects of Mohenjo-daro knew as well as anyone how to erect two or perhaps three-storeyed houses according to the usual methods—houses, that is to say, in which the upper floors corresponded in plan with the lower ; and they would certainly never

[1] Cf. p. 207 *infra* and Fig. 10.

[2] I infer this from indications in the brickwork of the jambs. The actual door appears to have been about 5 ft. 3 in. high.

have wasted valuable space by constructing solid terraces on the ground floor, unless there had been exceptionally strong reasons for them.

Other and larger buildings.

As already indicated, there are many buildings at Mohenjo-daro much larger than the two described above. Thus, in the same VS Area (Section A) there is the massive and well-built structure No. XXVII of the Intermediate Period, which has only been partially excavated ; and in HR Area, Section B, Block 2, there is the very large house No. V, which in the Intermediate Period seems to have comprised many other courts and rooms besides those ascribed to it by Mr. Sahni[1]: namely, the whole group west of Court 70 (between it and Second Street) and probably others to the south of this court as well, including Courts 109 and 124. A third building, also planned on a large scale, is No. XVIII in the same area, which, according to my view, occupied the whole of Block 4 and included the subsidiary quarters XIX to XXII.[2] A fourth (numbered XLVIII and XLIX on the plan) is beginning to emerge in Block 6 at the north-west corner of the same area. A fifth, as yet only half excavated, is in Section E of the DK Area.[3] A sixth is in the SD Area, immediately south of the Great Bath.[4] Whether these spacious and elaborate edifices were private houses or not has yet to be determined. Quite conceivably some of them were temples. In Mesopotamia the temples of the gods were to all intents and purposes copies of the royal palaces—dwellings where a god could eat, drink, and make merry like any mortal prince, and even be wedded on occasion to his priestess. It may be, therefore, that the same idea held good at Mohenjo-daro, and that some of these exceptionally large buildings were erected as homes for the gods. The first, second, fifth, and sixth of the buildings enumerated above would have been specially appropriate for this purpose, and it may be recalled that in one of them, viz. No. V of HR Area, Section B, the excavators found a series of those peculiar ringstones which we have good reason for believing were objects of cult worship.[5] All this, however, is sheer conjecture. Like the Minoans, the Indus people may have had no public shrines at all, or if they had them, the shrines may have been wholly unlike their ordinary residences. Among the buildings of Mohenjo-daro are several whose purpose we have not yet succeeded in discovering, and any one of these might have been a shrine as well as anything else. Thus, in HR Area, Section B, Block 7, there is the little building L, containing two chambers, one much larger than the other, with a corridor at the side[6]; and in the same area, Block 5, there is the larger structure XXX, which comprised a large central chamber (55) with a corridor on its western and southern sides, a well and two other small chambers at its southern end, and a group of somewhat larger chambers at its northern, the original plan of which is obscured beneath later accretions.[7] Little, unfortunately, is left of this interesting ruin except its foundations, but these are unusually massive (nearly 10 ft. deep with a solid infilling of crude brick) and presuppose a correspondingly high superstructure, which might very well have taken the form of a corbelled *śikhara* over the central apartment. Whatever the use to which this building was put, it is difficult to escape the conviction that the small quarters (Nos. XXXIII to XXXVII and XLIV to XLVII) ranged symmetrically in a double row alongside it, were in some way directly connected with it, being occupied either by menials belonging to the main building or, maybe, serving as apartments for visitors. Indeed, it is not unlikely that many of the other structures in Block 5 may also have formed part of the same group, with No. XXX as its centre.

Their purpose uncertain. Possibly some were temples.

Other structures that may also have been shrines.

[1] Cf pp. 190 ff *infra* and Pls. XLIX, *a* and L, *a*.

[2] Cf. p. 201 *infra* and Pl. L, *b*.

[3] Cf. p. 251 *infra* and Pls. LXIV and LXXIV.

[4] Cf. p. 143–5 *infra* and Plan on Pl. XXII.

[5] Cf. pp. 61 ff. *infra* (Chap. V).

[6] Cf. p. 208 *infra*.

[7] Cf. p. 204 *infra* and Pl. LII, *a* and *b*.

Another building of the same class is No. XXI of Block 4, Section A, VS Area,[1] which, as originally planned, embraced a fairly large rectangular room (4), a small narrow apartment and well-chamber on the south, and two other small chambers on the west.[2] It was in one of the latter (No. 3) that a quantity of human bones, ashes, earthenware vessels, and other objects came to light, which in themselves suggest that the use to which this building was put was out of the common. Lastly, there is a small ruin standing on a hillock in DK Area, Block 2, Section A, which Mr. Dikshit, who excavated it, was disposed to regard as a shrine, though here, unfortunately, a substantial part of the foundations as well as of the superstructure has been eroded away, and it is no longer possible to reconstruct its ground plan.[3]

An obvious objection to identifying any of the foregoing as sacred shrines is the fact that not a trace of any image or image-base has been found in any one of them, nor, indeed, any object at all to suggest that they possessed a religious character. That the religion of the Indus people was iconic is, as we shall see in Chapter V, amply proved, and that their cult statues stood in chapels of some sort is vaguely suggested by certain seals on which a statue is depicted framed, as it were, in a doorway.[4] There is no evidence, however, that such chapels, if they existed at all, were public. They may have been nothing more than small rooms set apart in house or palace for worship, just as they were set apart in Minoan palaces and are still set apart in Hindu houses of to-day.

Pillared Hall in L Area.

It remains, in concluding this brief survey of the structural remains of Mohenjo-daro, to notice two other buildings in the western part of the site, viz. the curious pillared hall in Block 4, Section C, of L Area, and the Great Bath, west of the Stūpa in SD Area. The former, which is some 90 feet square, is described by Mr. Mackay in Chapter XI.[5] As originally designed in the Intermediate Period, there appears to have been nothing specially remarkable about it. It was simply a spacious hall with its roof supported on twenty brick piers, disposed in four rows of five each. But at some time in the Late Period its original plan was transformed by various additions, including partitions between some of the piers, and simultaneously the floor was divided up by a number of narrow corridors or gangways, most of which lie parallel to one another from north to south.[6] These corridors are neatly paved with brick, five courses in thickness, with raised borders at their edges; but what intervened in the strips between them can only be conjectured, since nothing was found there save broken brick and débris. In my own opinion a clue to the solution of the puzzle is to be found in some of the Buddhist rock-cut temples, where the floor of the hall is treated in a very similar manner, being divided up into corridors with long, low seats intervening between them. Thus, in the Mahārāja or Darbār Hall at Kānheri, the central part of which is 73 feet long by 32 feet wide, with a broad pillared verandah encompassing it on three sides,[7] are two long low benches about 57 feet long by 3 feet broad, running parallel to one another down the length of the hall. These benches were intended to accommodate the monks during the sitting of the Assembly, and here the monks must have sat side by side in two long rows facing the small shrine which stood in the middle of the long verandah directly opposite the

Suggested arrangement of benches and corridors.

[1] See *infra*, p. 224.

[2] See Plan on Pl. LVII. The transverse wall towards the east end of this chamber is a later addition.

[3] Cf. pp. 233–4 *infra* and Pls. LXI and LXVI, *a*.

[4] E.g., Pl. XII, 13.

[5] Cf. pp. 160 ff. *infra* and Pls. XXXIV–XXXVI.

[6] See Pls. XXX and XXXIV, *a*, *c*, and *d*.

[7] I.e., the two ends and the long side opposite the entrance. Cf. Fergusson and Burgess, *Cave Temples of India*, p. 354 and pl. liv.

entrance—in the spot, that is to say, where the presidential seat had been at the first Buddhist Convocation in the famous Sattapanni Hall. Similarly, in the Mahārwāra Hall at Ellora, there are two low parallel benches, 95 feet long by 3 feet wide, with corridors about 9 feet broad between them, on which the monks also sat in single rows. In the hall at Mohenjo-daro the arrangement of the benches was probably somewhat different. Here the chief seat seems to have been in the middle of the south side of the hall and the long benches would therefore be at right angles to it, the audience sitting on them in Oriental fashion, two by two, with immediate access to the corridors on either side in case they had to leave their seats.

Ceremonial seats and benches made of perishable materials.

A possible objection that may be taken to the explanation offered above is that, while the corridors are tolerably well preserved, nothing whatever has survived of the supposed seats. The reason for this, I suggest, is twofold. On the one hand, brick pavements like those of the corridors are wonderfully strong in resisting decay—a fact of which there is plentiful evidence on every hand at Mohenjo-daro ; on the other, the benches might well have been made of perishable materials, such as clay or clay and reeds combined, or of some wood like *udumbara*, especially if the hall was used for religious or ceremonial purposes ; for we know that in India these primitive materials were commonly used for the construction of sacrificial and other ritualistic seats from the earliest recorded times, and we may suspect that their use goes back to a still more remote age before ever bricks were made or stone was quarried.[1]

The Great Bath.

The Great Bath, which I have reserved to the last, was part of what appears to have been a vast hydropathic establishment and the most imposing of all the remains unearthed at Mohenjo-daro. Its plan is simple : in the centre, an open quadrangle with verandahs on its four sides, and at the back of three of the verandahs various galleries and rooms ; on the south, a long gallery with a small chamber in each corner ; on the east, a single range of small chambers, including one with a well (No. 16) ; on the north, a group of several halls and fair-sized rooms. In the midst of the open quadrangle is a large swimming-bath, some 39 feet long by 23 feet broad and sunk about 8 feet below the paving of the court, with a flight of steps[2] at either end, and at the foot of each a low platform for the convenience of bathers, who might otherwise have found the water too deep. The bath was filled from the well in Chamber 16 and possibly from other wells besides, and the waste water was carried off through a covered drain near the S.W. corner, the corbelled roof of which is some 6 ft. 6 in. in height (Pl. XXIV, *a*, *b*, and *c*).[3] These features are graphically shown in the oblique projection of the Great Bath (Pl. VII), which depicts the ground floor as it appeared in the Late Period after various changes and additions had been made to the original fabric. If the reader will compare this projection with the plan in Pl. XXII, he will readily be able to distinguish the walls which were carried up into the superstructure from those which were meant merely to consolidate the foundations, and he will also find it easier to comprehend the alterations effected during the Late Period, when the northern end of the building was filled in solid to make a flood-resisting plinth, while at the same time a stairway to the higher level was constructed between Chambers 21 and 22, and a second thick wall added along the north end of the building in order at once to strengthen the foundations and increase the floor space, the original north wall being simultaneously dismantled down to the top of the newly

[1] Cf. Professor S. C. Sarkar, *Some Aspects of the Earliest Social History of India* (Oxford, 1928), pp. 47 *sqq*.

[2] The brick steps were lined with timber bedded in bitumen.

[3] The vaulted passage over this drain, primarily provided no doubt for the purpose of cleaning, may have served as a secret exit in times of need.

constructed plinth. These alterations radically transformed the northern end of the Bath. In the original structure Chambers 23 and 24 (Pl. XXII) had formed one large hall, light to which was admitted through three parallel series of windows and doors—the first between the Verandah 26 and the open quadrangle, the second corresponding with it between the Verandah and Room 28, and the third opposite to the second on the other side of this room. In the course of the renovations this hall and the room immediately to the west of it were divided into two by a rough retaining wall running east and west, and the northern halves of both were then filled in with débris. Simultaneously, the windows on the north and west sides of Room 28 were bricked up, thus excluding most of the light from the rooms beyond.

Its elevation.

That the Great Bath had at least one upper storey is evident from the stairway ascending to the latter in Room 19, as well as from the drains descending from it; but what sort of elevation it had can only be conjectured. No doubt the fenestrated wall, which took the place of pillars around the quadrangle, was continued through to the upper floor, and doubtless there was an upper verandah corresponding with the lower one, with rooms behind it, which were also planned like those below. We know, too, from the quantities of charcoal and ashes found in the course of my excavations, that a great deal of timber must have gone to the building of the upper storey. What we do not know and what it would be of great interest to ascertain, is how the façade looking on to the quadrangle was treated. Did the roof, for example, project far beyond the face of the walls or was it finished off flush with them? Was there a cornice or battlements? Or were there string courses or other ornamental features to relieve the bareness? In attempting a restoration of this or any other building at Mohenjo-daro the great difficulty is that there is next to nothing to go on. Whatever the design or decoration of a structure, it was worked out by the builders in brick and timber. The timber, which, for aught we know, may have been richly carved, has altogether perished. The bricks alone remain—myriads on myriads of them—but not one of them is moulded or chiselled or shaped in such wise as to give a hint of any architectural design. Nor do we get any help in this matter from drawings or reliefs or models of buildings among the minor antiquities. On a sealing from Harappā, it is true, a structure of some sort is portrayed, seemingly of wood with trellis-work at the sides, a verandah and portico in front, flat roof and pinnacles; but this is the one and only picture of a building that has survived, and this one is too small and indeterminate to be of any real service.

And remarkable construction.

It remains to be said that for careful and massive construction the Great Bath could hardly have been improved upon. From N. to S. its overall measurement is 180 feet; from E. to W. 108 feet. The outer walls were between 7 and 8 feet in thickness at the base, with a batter on the outside of about 6″[1]; the inner walls for the most part about half as much. In the construction of the swimming-bath in the middle of the quadrangle, every possible precaution was taken to make its walls watertight and prevent any settlement of the foundations. To this end the actual lining of the tank was made of finely dressed brick laid in gypsum mortar, between 3 and 4 feet in thickness. Backing this was an inch thick damp-proof course of bitumen, which was kept in place and prevented from creeping by another thin wall of burnt brick behind it. Then came a packing of crude brick (inserted, no doubt, last of all), and behind this again another solid rectangle of burnt brick encompassing the whole, with short cross-walls between it and the verandah foundations in order to counteract any outward pressure. A more effective method of construction with the materials then available would hardly have been possible, and how well it has stood the test of time is sufficiently apparent from the present state of the tank which, after 5,000 years, is still astonishingly well preserved.

[1] See p. 136 *infra*.

Rows of small bathrooms and *hammām*.

Belonging apparently to the same hydropathic establishment as the Great Bath are some ranges of small bathrooms to the north of it, which Mr. Mackay brought to light in 1927–8 and which are duly described in his Report for that year. Another building that also formed part of the same establishment is one close by the south-west corner of the Great Bath, and apparently connected with it. This building has been only partially cleared and its purpose has not yet been definitely determined, but personally I have little doubt that it was a *hammām* or hot-air bath. The part of it that has been excavated consists of a number of rectangular platforms of solid brick, each the size of a small room, and about 5 feet in height,[1] with a series of vertical chases sunk in their sides. Between the platforms are narrow passages crossing each other at right angles, on the floors of which were found cinders and charcoal. These platforms I take to have been the solid substructure of the heated rooms ; and the chases in their sides I take to have been the beginnings of the hypocaust flues which distributed the heat through the walls and under the floors of the rooms above. Were this the only structure of its kind in Mohenjo-daro, the evidence of these substructures, passages, and flues might well seem too slender to justify us in concluding that it was a *hammām*. Fortunately, however, there is a building in DK Area (Section B, Block 2) which hardly permits us to doubt that the principle of the hypocaust was known to the Indus people. In this building, which may have been a private house, the floor of one of the rooms is supported on a series of dwarf walls, just as the floors of the hot rooms were supported in Indian *hammāms* of later times, and in a fragment of the superstructure that has survived there is what appears to be a vertical flue for heating the room. Whether this was a true *hammām*, or whether the hypocaust was intended merely to keep the house agreeably warm in winter, we cannot be sure ; nor is the point a very material one. What is of importance is that we have here evidence of a hypocaustic system of heating which goes far to corroborate my view that the building alongside the Great Bath served as a *hammām*.[2]

[1] I.e. as measured from the floor of the passages. The foundations of the platforms go down much deeper.

[2] For further particulars of the Great Bath, see Mr. Mackay's description of it in Chap. X.



The Great Bath, as seen from the south-west.



Street looking east, with Great Bath on left.

Chapter IV

OTHER ANTIQUITIES AND ART

Agriculture. GREAT cities with teeming populations like Mohenjo-daro and Harappā could never have come into being save in a country which was capable of producing food on a big scale, and where the presence of a great river made transport, irrigation, and trade easy.[1] Though little is yet known about the agriculture of the Indus peoples, specimens of wheat and barley unearthed among the ruins of Mohenjo-daro disclose the fact that both these grains were cultivated. The wheat has been identified as *Triticum compactum* or *Triticum sphærococcum*, both of which are grown in the Panjāb to-day; the barley as *Hordeum vulgare*, which, as Mr. Mackay points out, has also been found in predynastic graves in Egypt.[2] Whether the hoe was still in use or whether it had already been replaced by the plough has yet to be determined. Mr. Mackay surmises that certain large flint implements, which he compares with the Danubian "shoe-last" celts, may have served as ploughshares,[3] but the question is still an open one. For the grinding of the grain the saddle quern and muller still had to suffice, since the circular grindstone had not yet been invented.

Food. Besides the above cereals and dates, the stones of which have been found at both Mohenjo-daro and Harappā, the food of the Indus people comprised beef, mutton, pork, and poultry; the flesh of the ghariyāl (*Gavialis gangeticus*); turtles and tortoises[4]; fresh local fish from the river (*Rita rita* and *Wallago*) and dried fish (*Arius*) brought from the sea coast along with shell-fish. The bones or shells of all these have been found, often in a half-burnt state, either in and around the houses of the living or among the offerings to the dead, and they were undoubtedly articles of diet. Milk, too, must have been another important item, and doubtless vegetables and other fruits besides the date were included in the dietary, but as to these there is no positive evidence.

Domesticated animals. The domesticated animals were many. Those of which actual skeletal remains have been recovered from among the prehistoric ruins are the Indian "humped bull" or zebu (*Bos indicus*), the buffalo (*Bos bubalus*), sheep, elephant (*Elephas maximus*), camel (*Camelus*

[1] On the all-important part played by the great rivers of Southern Asia in the Chalcolithic Age, see pp. 93–4 *infra*.

[2] Cf. Chap. XXVIII, p. 586.

[3] Cf. Chap. XXIV, p. 458 *infra*.

[4] Cf. Chap. XXXI, p. 668. Among the animals identified by him which served for food, were *Trionyx gangeticus*, *Chitra indica*, *Emyda granosa*, *Testudo elegans*, *Damonia hamiltoni*, and *Batagur baska*. The *Trionyx gangeticus* is still a common article of diet in the Gangetic delta.

dromedarius), pig (*Sus cristatus*), and fowl (*Gallus* sp.), though it is not certain whether the two last-named were domesticated or wild. Bones of the dog (*Canis familiaris*) and horse (*Equus caballus*) have also been found, but in both cases on or near the surface, and, in face of the denudation that has taken place, it is impossible to affirm whether they belong to prehistoric or later times. Colonel Sewell observes that this *Canis familiaris* was akin to the Indian pariah as well as to the Australian dingo, and closely related, moreover, to the Anau dog. There is every likelihood, therefore, that it was known at an early date in the Indus valley, and it may indeed be the dog portrayed in some of our terra-cotta figurines (e.g. Pl. XCVI, 16 and 20), though these are too roughly shaped to be identified with certainty. That dogs were among the domesticated animals of the Indus people is proved by the hound, finely carved from steatite, which is illustrated in Pl. XCVI, 17. This, however, is a much more highly-bred creature than the common pariah. It calls to mind the modern mastiff and is seemingly quite distinct from the hounds depicted by Sumerian or Babylonian artists, or the hunting dogs figured in Assyrian bas-reliefs. Possibly it was some such breed as this that Alexander the Great saw in the Panjāb three thousand years later, when he was entertained to a display of lion-baiting—a breed of which Ælian remarks (iv, 19) that "if the dog once clutches a lion, he retains his hold so tenaciously that, if one should cut off his leg with a knife, he will not let go, however severe may be the pain he suffers, till death supervening compels him".

The dog.

The horse.

Of the *Equus caballus* Colonel Sewell notes that it was probably of the same stock as the modern country-bred of Western India and closely akin to the Anau horse. So far, therefore, as the breed is concerned, this is precisely the animal that might be expected at Mohenjo-daro. On the other hand, the absence of any representation[1] of a horse among the many animals portrayed here and at Harappā, points to the bones of the *Equus caballus*, which were found near the surface, being of a later date. This negative argument, however, is not altogether conclusive; for the camel, too, is unrepresented, though the discovery of a bone of this beast at a depth of 15 feet in the SD Area leaves little doubt that it was known as far back as the Intermediate Period. Moreover, if Professor Langdon is right in inferring that the horse had already been introduced into Mesopotamia before the middle of the fourth millennium B.C.,[2] it is likely to have found its way into the Indus valley also.

Humped and humpless cattle.

From the abundant remains of humped Indian bulls met with in every stratum of the site (most of them, be it said, of young animals), it is evident that the Indus Valley must have been specially rich in this fine breed of cattle, which was closely allied to, if not identical with, the magnificent white and grey breed still common in Sind, Northern Gujarāt, and Rājputāna, but wholly different from the small humped cattle of Central India and the Dekhan. To what a pitch these magnificent creatures[3] had been bred at this remote period may be gauged

[1] A rough terra-cotta figurine recently unearthed by Mr. Mackay might perhaps be intended for a horse, but might equally well represent the wild ass (*gurkhar* = Equus hemionus), which still roams the deserts of Thar and Parkar and Jaisalmir.

[2] This inference of Professor Langdon's is based on the occurrence of the ideogram for horse (*anšu-kur* = "ass of the mountains") in archaic Sumerian. Cf. p. 453. Although the question is still open, there is no sufficient reason at present for inferring that the horse was known at Mohenjo-daro in Chalcolithic times.

[3] The humped bull must have been common also at this time in Balūchistān, and appears to have been known also in West Persia and Mesopotamia (cf. Chap. XVIII, p. 347), but whether the breed in those countries was the same as in Sind, the indifferent representations of it do not allow us to determine. Colonel Sewell's inference (based on the respective levels at which their remains were found) that these humped cattle were posterior to the sheep and buffalo in Sind is not borne out by the seals and other objects depicting these animals, which are found indiscriminately at all levels.

from the life-like engravings of them on seals 329–40, one of which is reproduced on the front cover of this volume.

Besides these great humped cattle, there was also a smaller short-horned and humpless species which is not infrequently represented among the terra-cottas of this period, both in the Indus Valley and Balūchistān,[1] but of which no actual bones or horns have yet been identified.

Wild animals. Apart from the wild animals alluded to above, which were caught and killed for food, the only wild or half-wild ones whose remains have been found at Mohenjo-daro are the house-frequenting mungoose (*Herpestes auropunctatus*), the shrew (*Crocidura bidiana*), the black rat (*Mus rattus*), and four kinds of deer, viz. the Kashmir stag (*Cervus cashmerianus*), the sambhar (*Cervus unicolor*), spotted deer (*Cervus axis*), and hog-deer (*Cervus porcinus*). Other wild animals, however, which are figured on the seals and copper tablets or modelled in the round in terra-cotta, faience, bronze, etc., and which must have been familiar at this time in the Sind Valley, are the gaur or Indian bison,[2] the rhinoceros,[3] tiger,[4] monkey,[5] bear,[6] and hare.[7]

Stags' horn and other medicine. Of the four stags referred to above, nothing but the horns were found, and inasmuch as stags' horn has been used from time immemorial for medicinal purposes, Colonel Sewell infers that this was the use to which these horns were put at Mohenjo-daro, particularly as most of them must have been imported from very long distances. In this connection he points out that the Kashmir stag is now found only in Kashmīr and neighbouring Himālayan tracts at an altitude in summer-time of between 9,000 and 12,000 feet; that the spotted deer is not at present found in Sind or the Panjāb; and the sambhar neither in Sind, the Panjāb, nor Rājputāna; so that, of these four deer, the only one that is now native to Sind is the hog-deer.

Another substance with medicinal properties that has been found in small quantities at Mohenjo-daro is *silājīt*. It is a curious black substance found exuding from rocks in the Himālayas, and is said to be valuable in diseases of the liver, spleen, etc.[8]

Metals and minerals. Besides gold and silver, the Indus people were familiar with copper, tin, and lead. The respective sources from which these metals were obtained are uncertain. The metals may have been mined within the confines of India itself, where all of them, including even tin, are obtainable; or they may have been imported from neighbouring countries to the north and west, namely, from Persia, which yields each and every one of them; or from Afghānistān, which yields gold, silver, copper, and lead; or from Arabia, which yields gold and silver and copper; or from Western Tibet, which yields gold. **Gold.** Gold, according to Sir Edwin Pascoe,[9] is likely to have come from the South of India rather than from other quarters, since from early historic times it has always been the south of the Peninsula (Hyderābād,[10] Mysore, and the Madras Presidency) that has supplied the bulk of India's gold, and in some

[1] E.g. Pl. XCVII, Nos. 17–23, 25, and 26. No. 24 probably depicts the wild bison, as Seals 308–24 do.

[2] Pls. CX, 308–25, and CXI, 326.

[3] *Ibid.*, 342–7.

[4] *Ibid.*, 350–3, etc.

[5] Pls. XCVI, 13, and CLVIII, 5.

[6] Pl. CXLIV, 4.

[7] Pl. CXVII, 5 and 6.

[8] See pp. 689–90 *infra*, where the analysis of this substance is given by Mr. Sana Ullah, to whom its identification is due.

[9] See Chap. XXXII, where Sir Edwin Pascoe discusses the metals and minerals in detail.

[10] The Hyderābād here referred to is the Hyderābād State (Nizām's Dominions) in the Dekhan. It is not to be confused with the Hyderābād in Sind.

of the mines there workings of ancient date are still to be seen. A fact that lends support to this conjecture is that much of the gold from Mohenjo-daro and Harappā is alloyed with a substantial percentage of silver, and this alloy (electron, as it is commonly known) is found in the Kolār goldfields of Mysore and at Anantapur in Madras, but not in other districts from which the Indus people would have been likely to procure it. And another fact which also strengthens this conjecture is that the green amazon stone, of which more will be said anon, almost certainly came from the Nilgiri Hills, thus showing that there must have been commercial intercourse at this time between Sind and the south of the Peninsula. Gold was used for the manufacture of personal ornaments of all kinds and for such small articles as those figured in Pl. CLI, *b*, which are remarkable for the high finish given to the surface of the metal, though finer examples of goldwork, inlaid with faience, have been found at Harappā.

Silver and lead. Silver, like gold, was also fashioned into articles of jewellery ; but, unlike gold, it was made into relatively large and heavy vessels, and it is evident from this that in Sind it must have been much less precious than the other metal. Lead, which may have come from Ajmer or from the silver mines of Afghānistān or Persia, does not seem to have been widely used. A lump of it, which may have served as a net-sinker,[1] was found in L Area, and a small lead ornament with a disc of faience was found in VS Area,[2] but these are the only pieces recovered.

Copper. Copper, which was imported in large quantities, was obtainable either from Rājputāna or Balūchistān, or further afield from Kashmīr, Afghānistān, Persia, or Madras[3]; but the presence of an appreciable amount of lead indicates, in the opinion of the Archæological Chemist, that it came either from Rājputāna or Balūchistān or Persia, in all of which areas lead is found in association with the copper ore.[4] Copper had already to a large extent taken the place of stone for the manufacture of weapons, implements, and domestic utensils, such as lance-heads, daggers, knives, axes, chisels, and vessels, and was employed also for cheaper kinds of ornaments like bangles, ear-rings, finger-rings, and girdles, as well as for figurines, wire, etc.

Tin and bronze. Tin, which occurs in the form of cassiterite in the Western Presidency as well as in Bihār and Orissa, has not been found as a separate metal at Mohenjo-daro, but only as an alloy with copper, the two together forming bronze, in which the percentage of tin averages from 6 to 13 per cent.[5] Bronze was used in preference to copper for the manufacture of weapons and implements requiring an extra sharp cutting-edge and for ornaments, figurines, and other such articles in which a specially fine finish was desired, but it was used for making virtually all the same objects as copper, including vases,[6] and would probably have superseded

[1] Cf. p. 156 *infra*

[2] In Block 4, near House XXVI. Cf. p. 227 *infra*

[3] For possible sources of supply, see p. 676 *infra*.

[4] See pp 483 ff In copper objects from Mohenjo-daro the presence of nickel is very marked, the alloy in one case running to as much as 9·38 per cent. With this exception, however, the average amount of nickel seems to be about the same as in Sumerian copper, and it may be that both countries obtained the metal from the same source. Copper objects from Balūchistān, on the other hand, whether of the prehistoric or historic period, show very faint races of nickel. Cf. Peake, "The Copper Mountain of Magan" in *Antiquity*, Dec, 1928.

[5] Mr. Sana Ullah doubts if it was ever higher than about 14 per cent, though in completely oxidized specimens it may appear to have been as high as 18 or 19 per cent. The specimens from Zangiān, Gatti, and other sites in Balūchistān, which show a very high percentage of tin, appear to be referable to the historic period.

[6] In Mr. Mackay's opinion such vessels were ordinarily raised from sheet metal, but this view is contested by Mr. Sana Ullah, who holds that they were first cast and then finished by hammering. Whatever the technical process, the results demonstrate remarkable skill on the part of the bronze workers.

the pure metal generally but for the scarcity of tin ; for it was certainly not due to any lack of skill in the working of this metal that bronze objects are rarer than copper ones at Mohenjo-daro and Harappā.[1]

Alloy of copper and arsenic. In addition to bronze there is another alloy of copper at Mohenjo-daro in which the tin is replaced by arsenic varying from 3 to 4.5 per cent. This alloy is about equal in hardness to a low-grade bronze. Whether in its case the arsenic was artificially added, or whether the alloy was a natural one, is a moot point.[2]

Building and other stones. Stone of any kind was a rarity[3] ; for none occurs in the alluvium of the Indus plain, and whatever stone might be required for building or other purposes had to be imported from more or less distant places. The three stones most easily obtained were a white or pale-coloured nummulitic limestone which occurs as an outcrop on the banks of the Indus at Sukkur[4] and could be brought down stream by boat or raft, gypsum (sulphate of lime), and alabaster (a refined form of gypsum), which could be quarried a hundred miles or so away in the Kīrthar mountains, or brought by boat, if that was more economical, from Kāthiāwār. Other stones in use both at Mohenjo-daro and Harappā were the fine-grained yellow " Jaisalmīr " stone, steatite or soapstone, and a dark grey slate, all three of which almost certainly came from Rājputāna[5] ; gneiss and basalt, which are found commonly in many of the neighbouring regions ; red, grey, and dark brown limestones ; grey sandstone and chert, the provenance of which has yet to be established. Gypsum went mainly to the making of plaster of Paris, which, as already noticed, was freely used at all periods as a mortar. Sukkur limestone does not seem to have been introduced much before the Late Period, and was then employed principally in the form of rough hammer-dressed blocks as a covering for drains, where the traffic was more than usually heavy or where, for other reasons, brick would not serve. Alabaster, which is a soft, ornamental kind of stone, was found effective for objects such as lattice screens, vessels, and small statues, which were not subjected to overmuch wear and tear. The harder stones, like gneiss and basalt and some varieties of limestone, were employed for saddle querns and mullers, door sockets, weights, and sometimes also for dishes and other vessels, the manufacture of which, mainly perhaps for ritual purposes, continued right on into historic times. From these hard stones were also made the figure-of-eight grinders with which the interiors of the stone dishes and saucers were hollowed out. Chert was chipped and ground into weights and polishers, or flaked for use as knives, just as obsidian was flaked in more western countries. Steatite was fashioned into statuettes and seals and finished off with a coating of hard, white paste. The yellow Jaisalmīr stone was evidently much prized and used, among other things, for statues and cult objects such as *lingas* and *yoni* rings, though grey limestone was more commonly employed for the last mentioned. For the rest, sandstone, slate, and limestone were made impartially into mace-heads and slate into vessels and barrel-shaped weights.

Semi-precious stones. Semi-precious stones[6] were used with fine colour effects for beads and other ornaments.

[1] Needless to say, the discoveries at Mohenjo-daro and Harappā have completely disposed of the hitherto accepted theory that bronze was not manufactured in India during the prehistoric age. Cf. Vincent A. Smith, " The Copper Age and Prehistoric Bronze Implements of India," *Ind. Antiquary*, 1905, pp. 229.

[2] Cf. p. 482 *infra*.

[3] As a proof of its rarity, Mr. Mackay remarks on the finding of a broken stone vessel which had been laboriously rivetted in antiquity.

[4] For the distribution of this nummulitic limestone, which belongs to the Khīrthar group, see *Gazetteer of the Province of Sind* (1907), vol. A, pp. 26–9.

[5] Steatite is also found in the South of India, and slate in Afghānistān and Sīstān, but there is no reason to suppose that they came from so far afield. See *infra*, pp. 678–80.

[6] For particulars of these stones and the places where they are to be found, see Chap. XXXII.

Of these the majority, including rock crystal, hæmatite, agate, chalcedony, onyx, carnelian, jasper, riband jasper, bloodstone, plasma, tachylite, and the exquisite azure-blue nepheline-sodalite, were obtainable from Rājputāna, the Panjāb, Kāthiāwār, or Central India. Some, like hæmatite, which is found up the Persian Gulf as well as in Rājputāna, the Panjāb, the Central Provinces and Bihār, or plasma, which is found in the beds of the Kistna and Godāvarī rivers as well as in Rājputāna, may have come from further afield, but it is safer to assume that they came from the nearer regions, with which trade in other commodities is known to have been going on. On the other hand, the nearest spot from which the beautiful green amazon stone (a variety of microcline felspar) could be got, was Doddabetta in the Nīlgiris, far away in Southern India,[1] and it is probable that amethyst was procured from the Dekhan trap. Lapis lazuli, turquoise, and jadeite were not obtainable in India at all. The first is believed to have come from Badakshān, a Province of Northern Afghānistān ; the second from the Persian Province of Khorāsān, though it is found in other parts of Persia also, as well as in Sīstān ; and jadeite—a hard form of jade—from either the Pāmīrs, Eastern Turkestān, or Tibet.

Miscellaneous minerals.

Other minerals found at Mohenjo-daro that deserve notice are : bitumen—used for waterproofing and other purposes—which probably was brought from Isa Khel on the right bank of the Indus, or from the Marri Hills or Sanni in Balūchistān, but might also have come by water from Hit on the Euphrates ; red ochre, which is common in Cutch, Central India, and the Central Provinces, but is also shipped to India in large quantities from Hormuz and other islands on the Persian Gulf, which produce a specially brilliant variety ; green-earth (glauconite), which probably came from Balūchistān, though there are many other possible sources ; and löllingite, an arsenic mineral which probably came from the Panjāb, but is found also in Kashmīr, Afghānistān, Persia, and Asia Minor.[2]

Other materials.

Besides the metals and minerals detailed above, several other materials, natural or artificial, were in use for ornamental purposes as well as for making various small articles. Excluding pottery, these materials were : bone, ivory, shell, faience, and vitrified paste. Bone must have been easily obtainable in the locality, and ivory is a commodity of which there has always been an abundant supply in India. Shells of many kinds[3] and in large quantities were imported from the coasts of India as well as from the Persian Gulf and the Red Sea, and the shell industry played a hardly less important part in the Indus Valley than it did in Sumer, though shell inlay-work does not seem to have been elaborated to quite the same degree as in the latter country. Faience, which resembled the faience of Mesopotamia, Minoan Greece, and Egypt, but has preserved its colours less brilliantly than in Egypt, was a soft and friable paste, sometimes made of powdered steatite, usually white in colour and coated with a blue, green, or white vitreous glaze.[4]

Spinning and textiles.

That spinning was common in the houses of Mohenjo-daro is evident from the finding of numerous spindle-whorls in the houses ; and that it was practised by the well-to-do and poor alike is indicated by the fact that the whorls are made of the more expensive faience as well as of the cheaper pottery and shell. For warmer textiles wool was used ; for lighter

[1] Amazon stone is found also in the Ilmen Mountains—a continuation of the Ural—and is said to occur, though there is some doubt on the point, in Kashmīr. It is improbable, however, that it could have come from either of these sources. Cf. p. 678 *infra*.

[2] On löllingite, see Sir E. Pascoe's and Mr. Sana Ullah's remarks at pp. 684, 685, and 690.

[3] Nine species of shells have been identified by Colonel Sewell and are enumerated at pp. 664–6 *infra*.

[4] The widespread manufacture of faience, which is not likely to have been invented independently in different countries, is one of the many striking illustrations of the homogeneity of culture in Chalcolithic times.

ones, cotton.[1] Of the latter material a few minute scraps found adhering to the side of a silver vase[2] have been subjected to an exhaustive examination by Messrs. A. N. Gulati, M.Sc., and A. J. Turner, M.A., B.Sc., of the Indian Central Cotton Committee, Technological Laboratory.[3] The cotton resembles the coarser varieties of present-day Indian cottons, and was produced from a plant closely related to *Gossypium arboreum* or one of its varieties—*sanguineum*, *neglectum*, *indicum*, or *cernuum*. It is quite unlike the present-day American cotton (*Gossypium hirsutum*) or any of the finer varieties. Its typical convoluted structure (Pl. CLIX, 6 and 7) proves that this Indus cotton could neither have come from a wild species such as *Gossypium stocksii*, which is found in Sind to-day and has no convolutions, nor from the *Bombax* species (e.g. *Bombax malabaricum*), which is also without convolutions. This discovery, which is one of the most interesting of the minor discoveries made at Mohenjo-daro, disposes finally of the idea that the fine Indian cotton known to the Babylonians as *sindhu* and to the Greeks as *sindôn* was a product of the cotton-tree and not a true cotton. Let it be added that the purple dye on a scrap of this cotton material is thought by Messrs. Gulati and Turner to be probably of the madder class. **Cotton.**

In a city as cosmopolitan as Mohenjo-daro, with elements in its population drawn from at least four different races, the dress of the people was probably as varied as their personal appearance, but unfortunately our evidence on the subject is at present very scanty. The two statues illustrated in Pls. XCVIII and C, 1–3, show us a male figure wearing a long shawl, which was drawn over the left shoulder and under the right, so as to leave the right arm free, and, in the latter case at any rate, was ample enough to cover the seated figure down to its feet. Whether a tunic of any sort or a loin-cloth was worn beneath this shawl, there is as yet no evidence to show. Some of the terra-cotta figurines also represent males who are completely nude save for their head-dresses and ornaments (cf. Pl. XCIV, 3, 4, and 11); but it would not, I think, be safe to infer from them that it was customary for men of the poor or any other class to go nude; for it is not unlikely that these particular terra-cottas may represent male deities, and in that case they may be perpetuating a practice of some bygone age, which had long since been discarded. The same observation applies, and still more forcibly, to the female figurines of clay, which, with the exception of such *genre* subjects as Pl. XCV, 19 and 20, and of the *ex-votos* of pregnant women illustrated in Pl. XCV, 24, 29 and 30, are undoubtedly representations of the Mother Goddess, and wear nothing more in the way of apparel than a band about the loins—a band which, we may suppose, was generally made of cotton (cf. Pl. XCV, 26–8), but sometimes of wool and was sometimes not unlike the Sumerian *kaunakes* (Pl. XCV, 10). The bronze figure of a nude girl, illustrated in Pl. XCIV, 6–8, is in a different category; for here we clearly have a dancer or *nautch* girl of aboriginal stock represented, and we may reasonably infer that girls of this class were accustomed to wear nothing more than their ornaments when dancing, though it would be rash to suppose that they ordinarily went naked. **Dress.**

As to the head and head-dress, the men wore short beards and whiskers, with the upper lip sometimes shaven, as in Sumer, sometimes not. Their hair was taken back from the forehead and either cut short behind as in Pl. XCVIII, or coiled in a knot or chignon at the **Hair and head-dress.**

[1] Whether flax was also in use we do not know, but prima facie it is unlikely that both flax and cotton would have been cultivated simultaneously, albeit flax was already well known in Mesopotamia and Egypt. Herodotus, writing about 445 B.C. and describing the cotton plant, implies that it was peculiar to India (iii, 106). Elsewhere (i, 195 and ii, 37, 81), he states specifically that the Babylonians wore dresses of linen or wool and the Egyptians the same.

[2] Cf. pp. 194 and 585.

[3] See Bulletin No. 17, Technological Series, No. 12, *A Note on the Early History of Cotton*, by A. N. Gulati and A. J. Turner.

back of the head, with a fillet to support it, as in Pl. XCIX, 5, 6, 8, and 9. Specimens of fillets have been found at Mohenjo-daro, consisting of thin bands of beaten gold with holes for cords at their ends (cf. Pl. CLI, *a*), but as a rule, no doubt, the fillets would be of cotton or some other pliable material. In the case of the nude male figure of Pl. XCIV, 3, the head-dress takes the form of a cap curling into a point behind, while in that of Pl. XCIV, 11, the cap is taller and provided with a rolled brim.

The one and only head that we possess belonging to what appears to be a female statue exhibits the hair falling loose behind. The bronze dancing-girl, on the other hand, has it coiled in a heavy mass which starts from above the left ear and falls over the right shoulder, while in the terra-cottas it is generally hidden beneath a more or less elaborate coiffure, which in the case of one of the pregnant *ex-voto* figures (Pl. XCV, 30) takes the form of a modern turban, but in the case of the Mother Goddess is either crescent-shaped, as in Pl. XCV, 6, 7, 8, and 13, or pointed, as in Pl. XII, 1, with cup-shaped attachments on either side of the head supported by bands (Pls. XCIV, 1, 5, and 12, and XCV, 6, 7, 8, and 13).[1]

Personal ornaments.

Ornaments were freely worn by all classes alike: necklaces, fillets, armlets, and finger-rings by both men and women; girdles, ear-rings, and anklets by women alone. These various ornaments and their material and technique are described in detail by Mr. Mackay in Chapter XXVI. They comprise girdles, necklaces, bracelets and bangles, fillets for the hair, finger-rings, ear-rings, and perhaps nose-rings, ear-studs, and ornamental pins and buttons. Those for the rich were of gold and silver, faience, ivory, and the many semi-precious stones enumerated above; for the poor they were mainly of shell, bone, copper, and terra-cotta. The girdles were worn round the loins as shown in Pl. XCIV, 14. Some exceptionally fine specimens of them were found by Mr. Dikshit in a hoard in a house at M in Trench E, DK Area, and are figured in Pl. CLI, *b*.[2] They are composed of several strings of long tubular beads of carnelian, the boring of which implies no small degree of technical skill, with spacers and terminals of bronze or copper on which traces of gold were still visible. Cheaper girdles were made after precisely the same pattern, but entirely of terra-cotta instead of carnelian and metal. Besides the long tubular beads, which were suitable for girdles rather than for necklaces, large numbers of small beads have been found, most of which probably belonged to necklaces—a specially favourite form of ornament with the Indus people—though many may equally well have belonged to bracelets or girdles. The beads in question are of great variety: barrel-shaped, globular, segmented, cog-wheel, etc. Some are of metal—gold, silver, copper, or bronze; others of faience, glazed steatite, shell, bone, paste, or terra-cotta; but the vast majority are of one or other of the brightly coloured stones mentioned above. A singularly beautiful necklace, which is figured in Pl. CXLVIII, *a*, is made of soft green jadeite beads with discs of gold between, producing the effect of a bead and reel moulding, with pendant drops in front of agate-jasper. In this case, fortunately, the jadeite and gold have lost little of their original beauty, and they afford a striking example of the fine sense for colour possessed by the Indus jewellers. In other cases, stones like the blue nepheline-sodalite have lost their pristine brilliance and give but an indifferent idea of their appearance when first made up.

Of bracelets, a fine example made of six strands of hollow globular gold beads is illustrated in Pl. CXLIX, 3. Other bracelets are made of blue glazed faience[3] and others of what Mr. Mackay terms a vitrified clay, dark brown or black on the surface, light grey

[1] Cf. Chap. V, pp. 49–52.

[2] The actual length of the girdles as shown in the illustration is largely a matter of conjecture.

[3] A pair of beautiful blue glazed faience bracelets was found at Harappā. They are of the typical Indus shape (cf. Pl CLV, 41) and fluted across the outer edge (cf. Pl CLVII, 22).

inside, with a ring like metal and sometimes bearing inscriptions in very minute characters.[1] The bronze dancing-girl (Pl. XCIV, 6–8) has her left arm entirely encased in bangles up to the arm-pit. Bangles covering the whole arm are still commonly worn in Gujarāt, though they are being given up in Sind.[2] Nowadays, they are usually made of ivory, and those worn by the dancing-girl may have been of this material, though they might equally have been of shell or thin metal plating.[3] Faience would hardly have been durable enough where so many bangles were worn together, and solid metal, terra-cotta, or vitrified paste would probably have been too heavy. Bangles of true glass are not found in the Indus Valley, nor was glass used for the manufacture of any other objects. This is the more surprising, because not only was the secret of glass-making known in Mesopotamia in the third millennium B.C. and in Egypt as far back as pre-dynastic times (see *infra*, p. 582), but bangles of parti-coloured glass were found by Sir Aurel Stein in Chalcolithic deposits at Dabar-kōt, Kulli, Suktagēn-dor, and Shāhī-Tump in Balūchistān, as well as Sīstān.

Finger-rings and ear-rings were generally very plain and simple—little more in fact than circlets of wire ; but what appears to be the bezel of a more elaborate type of ring—a flat square of silver adorned with a geometric cross pattern—is figured in Pl. CXLVIII, *a*.

Weapons of war or of the chase comprised axes, spears, daggers, bows and arrows, maces, slings, and possibly—though not probably—catapults. Particulars of these weapons are given by Mr. Mackay in Chapters XXIV and XXV. They are weapons of offence only. Of shields, helmets, greaves, or other defensive armour, there is no trace ; nor has the sword, which was to become one of the characteristic weapons [4] of the later Copper Age in the Jumna-Ganges valley, yet made its appearance. The blade-axes or celts (Pls. CXXXVIII and CXXXIX), which were usually of copper, more rarely of bronze, were of two types—one long and narrow, the other short and broad. Both types are widely distributed in the Middle and Near East, and stone prototypes of both are common in Northern and Central India. On the other hand, the long bar celts which are found later on in the Jumna-Ganges valley and the barbed harpoon heads and swords associated with them are entirely absent at Mohenjo-daro. The spear-heads in use among the Indus folk (cf. Pls. CXXXV to CXXXVII) are unaccountably primitive in form, thin and broad in the blade without any strengthening midrib, and with a tang instead of a socket. Mr. Mackay points out that in Egypt and Sumer they had socketted spear-heads with well developed midribs before 3000 B.C., and he inclines to the view that these spear-heads of Mohenjo-daro were spoils taken from some inferior jungle tribe, not manufactured on the spot. This explanation, however, is discounted by the fact that, with one exception, the spear-heads from Harappā are of the same flimsy type,[5] showing the same close correspondence with the specimens from Mohenjo-daro that other objects do. Although the weapons under discussion have all been classed as spear or lance-heads, it is possible that some of them (e.g. Nos. 3, 5, and 7 of Pl. CXXXVI and No. 3 of Pl. CXXXVII) may have served as daggers or knives.[6] Of stone arrow-heads no examples have been found at Mohenjo-daro and of copper ones only a solitary specimen [7]

Weapons.

[1] For further particulars of this vitrified paste, see Mr. Sana Ullah's remarks in Appendix I, p. 686.

[2] *Gazetteer of the Province of Sind*, p. 196.

[3] Gold and silver bangles, torques, and anklets, both hollow and made on a core of lac, are common in the historic period and quite light in weight.

[4] A heavy type of copper sword with well-developed midrib has been found at Fathgarh and other sites in the Jumna-Ganges valley.

[5] In the one exception referred to there is an incipient midrib, but no socket.

[6] No. 3819, which is pierced with holes for hafting, seems specially likely to have been a dagger.

[7] Mr. Mackay informs me that since the above was written a number of copper arrow-heads have been found.

(Pl. CXLIII, 12)—a fact that suggests that the bow-and-arrow could not have been a favourite weapon. Maces were of both stone and copper,[1] and of three different shapes, as shown in Pl. CXXXIV, 25–30. Of these, the pear-shaped mace was the commonest, as it was, indeed, in most other parts of the then civilized world.[2] Sling balls are very numerous and of two types—one round, the other ovoid. Whether catapults had been invented at this early age, is more than doubtful. Heavy balls have been found which may conceivably have been used in catapults, but it would be rash without further evidence to infer that this was their purpose.[3]

Household implements and utensils.

Just as copper and bronze had already superseded stone for weapons of war and the chase, so, too, they had superseded stone for ordinary household implements and utensils. Indeed, it is true to say that the only utensil now in daily use that was really characteristic of a stone culture was the flake knife of chert [4] (Pl. CXXXI, 1–16), provided no doubt with a handle and used for cutting up food, just as the obsidian flake was used in the Nearer East; and this type of knife seems so strangely out-of-date, so wholly incongruous when compared with the other artefacts of this period, that it is difficult to escape the conclusion that there must have been some special reason for the survival of this particular utensil—perhaps a religious conservatism which required the use of the traditional stone knife at meals instead of the new-fashioned metal one. A few stone celts, it is true, that have been found at Mohenjo-daro and Harappā, and the flint implements (possibly ploughshares) figured in Pl. CXXXI, 17–19, are typical stone artefacts, but, surprising as it may seem, these objects signify little or nothing as to actual age, since they continued in use, albeit perhaps among jungle folk only, right down to mediaeval times. I myself have unearthed neolithic celts both at Taxila and at Bhītā, in ruins of the Greek, Parthian, and early Gupta periods.

For the rest, none of the stone objects from Mohenjo-daro—be they dishes, bowls, vases, toilet-boxes, palettes, burnishers, or weights—can be regarded as typical artefacts of a Stone or Chalcolithic Age. Objects of the same class might have been turned out under, let us say, the Mauryas or Kushāns just as well as three thousand years earlier, and, but for the circumstances in which they were found, it would have been difficult, if not impossible, to determine their age.

In his description of the stone vessels in Ch. XX, Mr. Mackay notes that vases like those figured in Pl. CI, Nos. 11–19, were bored out with a tubular drill, while flat dishes, saucers, and bowls were hollowed out with a stone grinder,[5] as they were in Egypt and Sumer. All these Mohenjo-daro vessels happen to be of relatively soft stone (e.g. alabaster, limestone, or slate), but vessels of gneiss and other hard stones have been found at Harappā, showing that such refractory materials could be worked almost as well at this remote age as they were in the days of the Greeks and Mauryas and Scytho-Parthians.[6]

Weights.

The Indus weights are specially interesting. Nearly all the small ones are cubes of chert, first chipped and then ground down to the appropriate weight, the advantage of chert

[1] The copper specimens are from Harappā only

[2] Cf. Chap. XXIV, p 460, where Mr. Mackay observes that the lentoid variety (Pl. CXXXIV, 28 and 29) occurs at Susa and in pre-dynastic Egypt, but not in Mespotamia.

[3] *Ibid.*, p 465, where Mr. Mackay quotes from Banks' *Bismya*.

[4] Mr. Mackay notes (p. 458 *infra*) that the short (plain or serrated) flakes, which are characteristic of early Mesopotamian sites, are not found in Sind.

[5] Grinders of precisely the same type as our Mohenjo-daro examples have recently been found by Dr. Woolley at Ur.

[6] Some singularly fine specimens of granite dishes have been found at Taxila belonging to the period 200 B.C.–A.D. 100.

being that it is fine-grained and hard enough to defy ordinary wear and tear (Pl. CXXXI, 20–35). Besides these there are a few small weights of dark grey slate, resembling the barrel-shaped weights of Elam and Mesopotamia. The larger stone weights were conical in form, and either furnished with a rim at the apex or pierced with a hole, through which a rope could be passed for their easier handling. These and the smaller weights, which luckily are very numerous, have all been carefully tabulated by Mr. A. S. Hemmy, the results of whose investigations will be found in Ch. XXIX. According to Mr. Hemmy, these Indus weights are made with greater accuracy and consistency than those of Elam and Mesopotamia. As to the sequence of their ratios, he shows that it was binary at first like the ratios of the Susa weights, but subsequently decimal, viz. 1, 2, 4, 8, 16, 32, 64, 160, 200, 320, 640, 1,600 ; and that the most frequently recurring weight (ratio 16) had a mean value of 13.71 gm. (= 211.5 *g.t.*), which bore no relation either to the light Babylonian or heavy Assyrian shekel.[1]

Metal, faience, and pottery vessels.

Vessels of copper and bronze were relatively rare,[2] of silver still rarer ; and faience was used only for small ornamental vases intended for cosmetics and the like. Of ordinary domestic vessels 99 per cent were earthenware. These exhibit a great variety of shapes, as the reader will perceive from the drawings on Pls. LXXIX to LXXXVI and Mr. Mackay's description in Ch. XVII. Among them are offerings' stands, beakers, bowls, goblets, dishes, basins, pans, saucers, pipkins, cups, ladles, jar-stands, heaters, store jars, and a multiplicity of other vessels, each adapted to its own particular purpose. The offering-stands, goblets with pointed bases, heaters and some of the so-called "store jars" are specially deserving of notice. The first mentioned (Pls. LXXVIII, 8, and LXXIX) may have had some ritualistic or ceremonial significance attaching to them, since they are commonly found among the offerings made to the dead, not only in the Indus valley but in Mesopotamia also.[3] The goblets with pointed bases (Pl. LXXVIII, 5) were the customary drinking cups of the period, as is conclusively shown by the large number of them found round some of the public drinking wells,[4] and the fact that they are turned up in tens of thousands suggests that it may have been a practice with the Indus folk, as it still is with the Hindus, to throw away the cup from which they had once drunk; for, unless some such practice as this obtained at Mohenjo-daro and Harappā, it is difficult to account for the vast numbers of these particular vessels. The heaters illustrated in Pl. LXXVIII, 20, may have been used also as strainers or colanders ; that they served as heaters has been shown by Sir Aurel Stein's discovery of similar vessels in Balūchistān, with the ashes still inside them. To the large jars figured in Pls. LXXXIV and LXXXV, I shall have occasion to allude again.[5] Many of them were certainly used for the storage of corn, oil, etc., but just as certainly others were used for offerings to the dead, and there is evidence from Harappā to show that the two classes are usually distinguishable.

Many types of earthenware vessels.

Painted red-and-black ware.

Most of the Indus pottery was wheel-made, well fired and plain, but painted ware was by no means uncommon. As a rule, the designs were executed in black on a dark red slip, and consisted ordinarily of foliate and geometrical devices, among which the "interlocking circle", "vase," "bangle," "comb," and "scale" motifs (Pls. XC, 22–4,

[1] See p. 596 *infra*.

[2] Large vessels of copper made of metal sheeting beaten out and rivetted, such as are common in a later age at Taxila, are unknown in the Indus period.

[3] For further particulars see Chap. VI, pp. 83–4, and Ch. XVII, pp. 293–8

[4] E.g. in HR Area, Section B, Block 5, House XLIII.

[5] Cf. Chap. VI, pp. 86–9.

LXXXIX, 9, and XCI, 32 and 34) are the most striking. Animal motifs are very rare, and the few pieces on which they do occur were probably imports from Balūchistān.[1] We shall see in Chapter VII that red-and-black ware of various kinds was almost as characteristic of Eastern Balūchistān (with Southern Wazīristān and the Derajāt) as it was of the Indus valley, but the true Indus red-and-black ware is easily recognizable by the boldness and careless freedom of its patterning as contrasted with the more precise and "tighter" decoration of the neighbouring Balūchī wares.

Great antiquity of the potter's art in Sind.

Though this Indus pottery was not of great merit in respect of either form or decoration, it would be a mistake to regard its shortcomings[2] as proof of primitiveness or inexperience on the part of the potters. On the contrary, the very multiplicity and variety of its shapes—most of them peculiar to the Indus valley and quite distinct from those of Persia and Mesopotamia—are evidence enough that the craft of the potter had been practised there from time immemorial; and the dull uninspired character of its decoration is largely due to its motifs having become stereotyped and lifeless by countless repetitions—repetitions which evidently went on century after century without any perceptible change, since the red-and-black potsherds from all seven strata at Mohenjo-daro are so alike as to defy discrimination.

Other kinds of painted ware.

Besides this red-and-black ware, which is peculiar to the Indus culture, the pottery of Mohenjo-daro comprised a few specimens of three other decorated wares, viz. "incised", "polychrome," and "glazed". Two of these are very interesting, the polychrome by reason of the rare stylishness of its colouring—vermilion and black on a ground of cream—and because it is quite different from the polychrome wares of Balūchistān or Mesopotamia[3]; the glazed ware because it is not only the earliest example of its kind known to us in the ancient world, but a singularly fine fabric into the bargain, with the appearance almost of an opaque cream-coloured glass with purplish black markings.[4]

Other domestic articles.

Among other domestic articles made of earthenware were spindle-whorls (also made of faience and shell), flesh rubbers, cake-moulds, dippers, and toys. Bone, too, and ivory and shell were pressed into the service of the housewife for the making of needles, bodkins, combs, dippers, and the like,[5] while copper and bronze were used for the manufacture of axes, adzes, saws, chisels, awls, reamers, knives, leather cutters, sickles, razors, needles, ladles, and fish-hooks, as well as for the bowls, dishes, and other vessels already alluded to.[6] All these are described in detail by Mr. Mackay in Ch. XXIV, and illustrated in Pls. CXXXV–CXLIV. Among them I would invite the reader's particular attention to the razor figured in Pl. CXXXVII, 5, of which many examples have since been found,[7] and to the saws, chisels, and knives. The saws (Pl. CXXXVII, 7) are of the parabolic type,

[1] E.g. Pl. LXXXIX, 1 and 2 (as to the latter see my remarks in Chap. VI, p. 82), and Pl XC, 21, which looks suspiciously like Mehī ware. N.B.—The conventionalized antelope are upside down in this illustration.

[2] Among these shortcomings are the almost complete absence of spouts and handles, as distinct from mere perforated lugs (e.g. Pl LXXXIII, Type AC).

[3] Cf. Pl LXXXVII, 2 and 3, and Chap. XVII, p. 321.

[4] Cf Pl. CLIX, 1 and 2, and Chap. XXVIII, p. 578 sq., where Mr. Mackay notes that glazed pottery first appears in Mesopotamia about 1000 B.C. and in Egypt not until Roman times.

[5] For needles, bodkins, combs, handles, etc, cf. Pls. CXXXII, CXLIII, and CLVI, and Chap. XXIV; for dippers, Pl. CLVI, 26–9.

[6] See *supra*, p. 30.

[7] A complete razor of another type with a sort of swan-head handle has since been found by Mr. Mackay.

like the earliest saws of Egypt, without any rake to the teeth,[1] which are very small. The chisels (Pl. CXXXV, 11–16) are of three types, one of which, says Mr. Mackay (i.e. the type figured in Pl. CXXXV, 12 and 13), is peculiar to the Indus Valley.[2] None of these chisels, be it observed, has a straight edge. Knives of bronze or copper are surprisingly rare, possibly because, as I have already suggested, there was some religious objection to using metal for cutting up food, though it may be that some of the implements classified as spear-heads or daggers ought rather to be classified as knives.

Toys and games. For toys the children had rattles, whistles, and clay models of men and women, animals, birds, carts, and household articles, such as the baking pan figured in Pl. CLIII, 1 and 2. Some of the animals had movable heads (Pl. CLIII, 39); whistles might take the form of birds (Pl. CLIII, 17 and 18); birds might be mounted on wheels and oxen might be yoked to toy carts (*ibid.*, No. 24). These little toy carts are particularly interesting as being among the earliest representations of wheeled vehicles known to us, approximately contemporary, that is to say, with the chariot depicted on a stone slab at Ur (*c.* 3200 B.C., according to Mr. Woolley), and the model of a wagon from Anau.[3] The toy carts from Mohenjo-daro are all of terra-cotta and for the most part of the type shown by Mr. Mackay on Pl. CLIV, where they are compared with the modern farm carts of Sind. There is a specimen, however, from Harappā made of copper, which seems as if it might rather have resembled the present day ekka.[4] No doubt many other children's toys were made of less durable materials than terra-cotta, and have perished in the course of the ages.

For games they had marbles and dice. The former are of agate, onyx, slate, and other hard stones, sometimes very beautifully made. The dice are usually cubes like our modern European dice, not oblong like the modern Indian ones, and they differ from the latter also in the disposition of their numbers, 1 being opposite to 2, 3 to 4, and 5 to 6, whereas in modern dice 1 is opposite to 6, 2 to 5, and 3 to 4.[5] Mr. Mackay is of opinion that the bone pieces figured in Pl. CXXXII, 19 and 20 and 22 to 45, which he calls "casting bones", may also have been used in some game of chance, and he thinks also that the objects pictured in Pl. XIII, 3–6, and Pl. CLV, 11–25, which have been found in large numbers both at Mohenjo-daro and at Harappā, were gamesmen.[6] As to the last, I do not share his opinion. Without excluding the possibility of their having been converted into gamesmen, my own view is that originally these objects were replicas in miniature of the large cult *lingas* and *bætyls*, such as those illustrated in Pl. XIV, 3, 5, and 7, and that they were meant to be carried as amulets on the person, just as the little wavy rings figured in Pl. XIII, 9 and 10, were replicas on a small scale of the colossal cult stone rings shown in Pl. XIV, 6 and 8, and were similarly intended to serve as amulets.[7]

Writing. The script which the Indus people invented for their writing belongs to the same order as other quasi-pictographic scripts of this period, such as the Proto-Elamitic, Early Sumerian, Minoan, or Egyptian, but though the signs used in this script were, to a large extent, pictographic in their origin, they had long since become standardized and reduced to what Professor Langdon aptly describes as "neat monumental forms", so that in effect there are very few of the objects portrayed that are now susceptible of identification, though, on the

[1] In modern Indian saws the rake of the teeth is the reverse of what it is in European ones.

[2] Cf. Chap. XXV, p. 501.

[3] See *infra*, Chap. XXVII, pp. 554–5.

[4] Cf. *ASR.* 1926–7, pl. xxiii.

[5] See Chap. XXVII, p. 552. For dice in the age of the Rigveda, see *Camb. Hist. of India*, vol. i, p. 102 and footnote.

[6] Cf. Chap. XXVII, pp. 557–8.

[7] Cf. Chap. V, pp. 59–63.

other hand, they are not so conventionalized by usage as to have become mere stereotyped summaries, as it were, like the cuneiform characters of Mesopotamia. All the signs of the Indus script that are known to us have been tabulated by Mr. Sidney Smith and Mr. C. J. Gadd in the *Manual* reproduced in Pls. CXIX to CXXIX, and along with each sign are given *in extenso* the inscriptions in which that sign occurs, so that the student can perceive at a glance whether it is initial, medial, or final, with what other signs it is associated, to what modifications it may have been subjected, etc. These inscriptions, which, be it observed, are all quite short, are taken partly from the seals, sealings, and pottery fragments from Mohenjo-daro which are figured in Pls. CII to CXVI and CXVIII, partly from analogous objects found at Harappā which are to be illustrated in a subsequent volume ; they do not include either the texts on the copper tablets reproduced in Pls. CXVII and CXVIII, the drawings of which had not been completed in time, or the minute characters engraved on certain bangles of vitrified clay to which allusion has already been made. Of clay tablets, let it be added, such as were ordinarily used in Mesopotamia for letters and other lengthy documents, no trace has been found in the Indus Valley, and we must infer that, in place of clay, the Indus scribes employed less durable materials, such as birch bark, palm leaves, parchment, wood, or cotton cloth, any of which would naturally have perished in the course of the ages.

Sign manual of Pls. CXIX to CXXIX.

The number of signs listed in Messrs. Smith and Gadd's *Manual* is 396, but among these it may be that some have been differentiated which are really identical, the apparent differences between them being merely accidental, while others again (and there are many such) may be variants of this or that sign modified for purposes at which we can only guess. On the other hand, it is possible that some signs have not been differentiated which ought to have been ; and we may be sure, too, that many more signs will be found to swell the existing list before it is complete.

Distinguishing features of script.

Of the features that distinguish this Indus writing, the most striking perhaps are the extent and variety of its characters and the ingenuity displayed, on the one hand, in modifying them by the addition of accents, strokes, or other simple expedients; on the other, in combining one sign with another in the form of conjuncts, as is so frequently done in later Indian scripts. Such modifications and combinations are not unknown, Mr. Smith points out, in other scripts of this period; but nowhere else are they employed so systematically or so widely. Other features that deserve particular notice are the use this script makes of small groups of strokes, never exceeding twelve in number, which apparently have a phonetic instead of a numerical value, and the unchanging forms of its signs, which, from first to last, during all the centuries of Mohenjo-daro's occupation, seem, like other antiquities on this site, to undergo no perceptible alteration.

Direction of writing.

In order that the legends may be read in the correct way, the seals illustrated on Pls. CIII to CXV have been reproduced from impressions of the originals, not from the originals themselves, while the sealings and other inscribed objects have been photographed direct, so that in every case the inscriptions are to be read as they appear in the plates. Ordinarily the direction of the writing is from right to left, but in certain cases it appears to be *boustrophedon* ; that is, it starts from right to left in the first line and continues left to right in the second.[1]

[1] E.g. in Inscriptions 435 and 440, which are on the obverse and reverse of one and the same seal, and in No. 247. The former might be cited as evidence that the writing ran from left to right, since there can be no question that the engraver started the reverse legend on the left, but the three signs on the reverse are a repetition of the last three signs on the obverse, only that, instead of running from right to left, they run from left to right, the writing evidently being *boustrophedon*. A further argument in favour of a left to right direction might be drawn from the position of the sign

Script not alphabetic.

That the script was not an alphabetic one is evident from the large numbers of its signs. Probably it was in the main phonetic, the majority of the signs standing for open or closed syllables, and the remainder functioning either as complete ideograms or as determinatives to fix more precisely the requisite sound or meaning, as such determinatives do in Sumerian.[1] This, however, is no more than a surmise, prompted by what is known of other contemporary scripts; for, as a fact, none of the Indus signs, whether initial, medial, or final, can be identified with certainty as syllables, ideograms, or determinatives.[2]

Relation to other scripts.

Resemblances, more or less striking, can be traced between the Indus script and most of the other quasi-pictographic scripts of Western Asia and the Nearer East. Indeed, it is a significant fact that of the several experts who have made a study of the Indus writing, each has commented on its resemblance to some other script, but in each case the other script has been different—in one, Sumerian; in another, Proto-Elamite; in a third, Minoan; in a fourth, Hittite. We must be careful, however, not to let these obvious resemblances mislead us into imagining that the Indus script was directly borrowed from any other country. The truth seems to be that all these scripts are interrelated, but only up to a certain point. Their underlying principles are the same, and there is every likelihood that they all derived from one common origin, which probably went far back into neolithic times; but in each case they were just as individual in character, just as peculiar to the people who evolved them, as were the languages they were designed to record.

Suggested derivation of early Brāhmī from Indus script.

In Chap. XXII Professor Langdon makes out a strong case for deriving the early Brāhmī alphabet of India from this Indus script[3]; but whether his hypothesis will be acceptable to Indian epigraphists remains to be seen. Prima facie there is a strong presumption in favour of the Brāhmī alphabet having been evolved, like other alphabets, from a pictographic script, especially as it is now established that such a script had actually been in use on Indian soil; and in this connection it is worth recalling that the derivation of this alphabet from picture signs was postulated by Sir Alexander Cunningham two generations ago. Apart, moreover, from the resemblances traceable in individual signs, this presumption receives further support from the fact that two of the most characteristic features of the Indus script, viz. the systematic use of accents or other diacritical adjuncts and the practice of combining one sign with another are also distinguishing features of later Indian alphabetic writing, so that it seems as if, despite all changes in race and language, these inventions of the early scribes had managed somehow to survive the centuries. We should be careful,

 in the legends on the four seals 12, 139, 253, and 321; for  usually stands at the extreme left of the text, in a position where it must be initial if the text is to be read from left to right, but final if from right to left. Now, the four legends referred to contain two lines, and this sign stands at the left of the first one. It looks, therefore, as if it were an initial, not a final sign, and as if the writing was from left to right. In these four cases, however, the second line appears to be independent of the first; for, if we turn to Seals 52 and 60, we find that, in the former, the sign  stands alone beneath the left-hand sign of the first line, while in the latter it is wedged in a little below the line of the other signs. Evidently, in both these cases it was the last sign to be engraved and space could not be found for it at the end of the first line. In Seal 247, also, it is clear that the legend runs thus: ,  being the final sign and the writing *boustrophedon*. On Seals 237 and 302, on the other hand, both lines appear to read from right to left. See also pp. 408, 409, 427, and 428.

[1] Professor Langdon notes, however, that such determinatives are lacking in the earliest Sumerian texts from Jemdet Nasr, the script of which, in his opinion, most closely resembles the Indus script.

[2] Cf. Chap. XXII.

[3] According to Bühler, whose theory has been generally accepted, the Brāhmī alphabet was of Semitic origin, and derived ultimately from a Phoenician script. Cf. *CHI.*, p. 62; Bühler, *Indische Palaeographie* (Grundriss d. indo-ar. Phil.).

however, not to attach overmuch weight to resemblances which may to some extent result from coincidence, still more careful not to assume that, because the Brāhmī letters may have derived their forms from these Indus signs, they also derived from them their sound values; for the chances of their having done so are obviously very remote. Fortunately, this is a matter on which there is every hope of further light being thrown when some of the later prehistoric sites in Sind and the Derajāt come to be excavated.

The language of the inscriptions.

Of the language of these texts little more can be said at present than that there is no reason for connecting it in any way with Sanskrit. The Indus civilization was pre-Āryan, and the Indus language or languages must have been pre-Āryan also. Possibly, one or other of them (if, as seems likely, there was more than one) was Dravidic. This, for three reasons, seems a most likely conjecture—first, because Dravidic-speaking people were the precursors of the Āryans over most of Northern India and were the only people likely to have been in possession of a culture as advanced as the Indus culture; secondly, because on the other side of the Kīrthar Range and at no great distance from the Indus Valley the Brāhūīs of Balūchistān have preserved among themselves an island of Dravidic speech which may well be a relic from pre-Āryan times, when Dravidic was perhaps the common language of these parts; thirdly, because the Dravidic languages being agglutinative, it is not unreasonable to look for a possible connection between them and the agglutinative language of Sumer in the Indus Valley, which, as we know, had many other close ties with Sumer. This is a conjecture, however, which there is no tangible evidence to support. The skeletal remains, as we shall presently see, point to the presence here of elements from four different races, viz. Proto-Australoids, Mediterraneans, Alpines, and Mongolo-Alpines, but it is quite impossible to affirm whether any of these spoke Dravidic. The Eastern Alpines are hardly likely to have done so, since there is no trace of their stock among the modern Dravidic-speaking races of India. And we should naturally expect the language of the Proto-Australoids to have belonged to the Mundā rather than the Dravidic group. Western Alpines are said to be strongly represented among the Kanarese-speaking peoples of the Western Dekhan and Mysore, but if racial characteristics can be taken into account in this problem of language, it is clearly the long-headed Mediterraneans who have the strongest claim to a connection by blood with the Dravidians and are most likely to have used a Dravidic speech. May it be that these same Mediterraneans—who are traceable across the whole south of the Afrasian belt—spoke agglutinative languages and that they, perhaps, more than any others, were the race at the back of this far-flung civilization of the Chalcolithic Age?

Art.

Lack of pure ornament for ornament's sake.

As far back as it has hitherto been possible to follow the story of Indian plastic and pictorial art, its outstanding feature has been its inveterate passion for the decorative—a passion which finds expression in filling up every available inch of space with rich exuberant designs, sometimes naturalistic, sometimes highly conventionalized, but usually inspired by the flora and fauna of the jungle. During the historic period this love of ornament has characterized every manifestation of Indian art, from the bas-reliefs of Bhārhut and Sānchī down to the modern silverwork of Benares or Tanjore, and it might have been expected that, when an earlier chapter of this art came to be revealed, we should find something of the same spirit running through it. This expectation has not been fulfilled. Of ornament for ornament's sake there is next to none, and what little there is, is not of a high order. Houses and public buildings may, as already remarked, have been lavishly decorated, but no trace of their decoration has survived. The weapons, implements, and utensils of everyday life are for the most part conspicuously plain, and, even when the pottery is painted, its dull, commonplace designs have nothing in common with the imaginative beauty of later Indian

ornament.[1] Indeed, the fashioning and painting of pottery in the Indus valley was essentially a craft, not an art. There may have been a time when, like the early pottery of Susa or Crete, it had some claim to be regarded as an art, but that could have been only in a much earlier phase; for, when we meet it, it has long since degenerated into a mere trade product, devoid of all individuality. The shapes of the vessels are practical enough and well adapted, no doubt, to the uses to which they were put, but they miss altogether the subtle grace, for example, of Minoan vases, nor can their painted ornament compare for an instant with the bold, stylish designs of the latter.

Seal engravings. Such art, worthy of the name, as has survived at Mohenjo-daro or Harappā, is chiefly to be found on engraved seals, amulets, and other small objects. Of the seal engravings the best are those that portray such living animals as the artist had an opportunity of studying: notably the humped bull, the buffalo, and the bison. Perhaps the most remarkable of all is the humped bull on Seal No. 337 (Pl. CXI), a replica of which is stamped on the cover of these volumes. Its engraver has obviously made a careful study of his subject and given us a faithful rendering of it, but he has done much more than this: he has tempered realism with breadth of treatment and restraint, and has brought out the dignity of the animal in a way that only the eye and hand of a true artist could have done; nor has he scrupled to portray the two horns as if seen from the front, mainly no doubt for the sake of the balance they give to the whole composition, but partly perhaps because of the special religious significance attaching to pairs of horns.

Sometimes the animals are more frankly realistic and spirited. Such are the buffalo and bison on Pl. CX, Nos. 304–6 and 308–25. The attitude of the former, with head raised in the act of bellowing, is a peculiarly characteristic one, and the way in which the head is turned slightly to one side so as to show the full sweep of the great horns is very effective. So, too, is the drawing of the bison on Seal 318, with its powerful arched shoulders and relatively small hindquarters. If we compare these animals with others on these seals, such as the rhinoceros and tiger (Nos. 341–55), we cannot fail to perceive how far the latter fall short of them, the fact being that they lack altogether the convincing touch of truth which comes only from personal observation on the part of the artist. The same remark applies also to the manifold figures of unicorns; for, though there is an undoubted semblance of reality about these animals—enough at any rate to distinguish them from purely chimerical ones, like those depicted on Seals 378–82—nevertheless, by comparison with the humped bulls, buffaloes, and bison, they appear weak, characterless creatures, which we may be sure the engraver himself never set eyes on.

Figurines in the round. Animal figurines in the round are for the most part children's playthings, with no more claim to be regarded as works of art than such playthings usually have. Among them, however, are a few, designed as amulets or ornaments, that constitute notable exceptions. One is the powerfully modelled young bull of terra-cotta, illustrated in Pl. XCVII, 23, the author of which, I suspect, might have carried his handiwork a great deal further if he had so chosen. Another is the exquisite miniature of a mastiff-like hound in steatite (Pl. XCVI, 17); and a third and fourth are two seated rams executed with equal skill in the same material (Pl. XCVII, 2 and 5). Then there is the little squirrel (Pl. XCVI, 7), also of faience, with purple-black stripes down its back on a ground of blue. It is sitting up with tail erect, as a squirrel's tail generally is, eating something from between its forepaws. Probably it was an amulet, and seemingly a favourite one, since numerous specimens of it have been found at both Mohenjo-daro and Harappā.

[1] It is to be noted that lotus flowers, buds, and leaves—the most typical motifs of later Indian ornament—are entirely absent from Indus art, though examples are not wanting of the lotus capsule (Pl. CLVIII, 4 and 6).

The monkey pictured in Pl. XCVI, 13, with its deep-set eyes and prominent brow, has an almost Chinese look; and the intricate carving of the pin-head in Pl. CLVIII, 5, which takes the form of three monkeys embracing one another, is also reminiscent of the same class of workmanship, though there is not the slightest reason for supposing that it was made elsewhere than in the Indus valley. In no sense can these objects be regarded as products of primitive or archaic art. Small as they are, they demonstrate a thorough comprehension of both work-in-the-round and relief, and exhibit a spontaneity and truthfulness to nature, of which even Hellenic art might not have been ashamed.

Human statues and statuettes of stone.

When we turn from the animal to the human form, the meagreness of our material makes it more difficult to estimate what the Indus artist was capable of. The terra-cotta figurines are of no help; for, whether genre or sacred, they are all too roughly and carelessly fashioned to come within the category of art. The stone images, too, are few and sadly mutilated; indeed, the only ones in a tolerable state of preservation are the three figured in Pls. XCVIII, XCIX, 4–6, and C, 1–3, and described in detail by Mr. Mackay on pp. 356–9. Of these the first is of steatite finished with a coating of hard white paste. It represents someone seemingly in the pose of a yogi, and it is for this reason that the eyelids are more than half closed and the eyes looking downward to the tip of the nose. I do not, however, think that the thick lips, broad-based nose, low forehead, and short, stunted neck are meant to reproduce the features of any individual; nor do I think that this head is typical of any particular racial stock. Probably it represents nothing more than a conventional type of deity or religious teacher in vogue at the time. Images such as this, with coarse, unmeaning features, have been turned out in countless numbers and for countless generations by Indian craftsmen—images of the Jain Tirthamkaras, of the Buddha and the Bodhisattvas, of Krishna, Vishnu, Śiva, and a host of other deities. As a rule, they are mere repetitions of a standard type of image familiar to everyone, and the less originality they possess, the better do they sell. To judge the art of the day by the standard of such images would be wholly misleading; and in my view it would probably be equally misleading if we were to attempt to estimate the character of the Indus sculpture from the statuette before us. Very different is the head figured on Pl. XCIX, 4–6. Here the prominent cheekbones, wide, thin-lipped mouth and other features leave no room for doubt that this was a portrait head, and when the nose and eyes were intact, we can well believe that the likeness was a tolerably good one. It is strange, though, that the sculptor should have been content with such conventional, saucer-like ears, when he obviously had the power to do so much better. It looks as if there must have been some particular reason for this curious distortion, which is found in the other heads also, though what the reason was it is hard to guess.[1] It is worth observing, however, that the few examples we possess of hands are also very crudely modelled, as if the sculptor, in the manner of Augustus John, deemed them hardly worth attention. In the seated image figured on Pl. C, 1–3, this defect is very marked, but it should be noticed that in this case the left arm and hand, which look especially malformed, are supposed to be hidden beneath the garment which the figure is wearing and which, as may be seen from the back view of the statue, passed over the left shoulder and under the right. Moreover, it is probable that the garment itself was originally painted in colours which would materially help to lessen the seeming deformity. For the rest, the sculptor has displayed noteworthy skill in the modelling of the bare right arm, shoulder, and chest, and in imparting a certain softness of texture to the flesh.

Bronze figurine of dancing-girl.

The only other sculpture in the round from Mohenjo-daro that claims notice here is the bronze dancing-girl of Pl. XCIV, 6–8. This is a small figurine of rather rough workmanship

[1] The hole in the centre of the ear is evidently intended for some attachment which may have concealed the shapelessness of the ear but does not excuse it.

with disproportionately long arms and legs. Almost, indeed, it is a caricature, but, like a good caricature, it gives a vivid impression of the young aboriginal nautch girl, her hand on hip in half-impudent posture, and legs slightly forward, as she beats time to the music with her feet. Small, too, as this figurine is, the modelling of the back, hips, and buttocks is quite effective (Pl. XCIV, 8), and in spite of obvious defects shows sound observation on the part of the artist.

Two stone statuettes from Harappā.

And now we come to two small statuettes which are more surprising even than the masterly engraving of the bull stamped on the covers of these two volumes. These two sculptures, which are reproduced in Pls. X and XI, were found in strata of the Chalcolithic Age at Harappā. When I first saw them I found it difficult to believe that they were prehistoric; they seemed so completely to upset all established ideas about early art. Modelling such as this was unknown in the ancient world up to the Hellenistic age of Greece, and I thought, therefore, that some mistake must surely have been made; that these figures belonged to the Indo-Greek, Scythian, or Parthian period in the Panjāb, and somehow or other had found their way into levels some 3,000 years older than those to which they properly belonged. This, too, I expect, will be the first idea of everyone else who is familiar with the history of early sculpture. Let us, however, look at the facts.

Circumstances of finding.

One of these statuettes (Pl. X) was unearthed by Mr. M. S. Vats among remains of the third or fourth stratum in a part of the site where no objects whatever of the historic age have appeared.[1] The other (Pl. XI) was discovered by Rai Bahadur Daya Ram Sahni in the fourth or fifth stratum in a different part of the site, but, again, at a spot where none but prehistoric remains have come to light. Now it is possible, though the possibility is remote, that one of these two statuettes might at some time or other have worked its way down through 6 to 10 feet of ruined masonry and pottery into the older strata; but that two should have done this in different parts of the site, and that these two should be the only objects of a later age found under the layers of prehistoric débris, is well-nigh incredible.

Evidence of materials and technique.

Let us consider, further, the internal evidence afforded by the statuettes themselves. And first as to their materials. The statuette on Pl. X is of fine red stone, the other of dark grey slate. Now, there was no stone obtainable at Harappā or anywhere near it. Whatever stone was needed there had to be brought from great distances. Where the particular kinds of stone we are discussing came from we do not know, but we do know that during the prehistoric age they were being imported and used for other objects besides the statuettes, while on the other hand there is no evidence to suggest that they were still being imported here 3,000 years later. Moreover, among the multitudes of Indo-Hellenistic sculptures in the Panjāb and on the North-West Frontier there is not one, so far as I am aware, that is made from either of these stones. Then, as to technique. In both statuettes, it will be observed, there are socket-holes in the neck and shoulders for the attachment of the head and arms, which were made in separate pieces; and in both, moreover, the nipples of the breasts were made independently and fixed in with cement. So far as I know, this technique is without parallel among stone sculptors of the historic period, whether of the Indo-Hellenistic or any other school. On the other hand, it is also unexampled at Mohenjo-daro, though this in any case would hardly surprise us, since the technique in question is one that is specially suited to small statuettes rather than to larger images like those of Mohenjo-daro, which offer much less risk of breakage. There is another point of technique that is also significant. In the red stone statuette (Pl. X) there is a large circular depression in front of each shoulder, with a smaller circular protuberance broken off in the middle of it. What these depressions were for is

[1] There is one mound only at Harappā on which a few remains of the early Gupta period were found. These remains include some terra-cotta figurines but of a style totally unlike the statuettes we are discussing.

not clear. They look as if they were intended to be inlaid with circular ornaments something like the circlets in the same position on the prehistoric terra-cotta figurine from Balūchistān which is illustrated in Pl. XII, No. 5. This, however, is beside the point. What I wish to draw attention to is that these depressions were made with a tubular drill, and that the tubular drill was habitually used by stoneworkers in the prehistoric, but rarely, if ever, in the historic age.

Evidence of style.

Thirdly, as to style. The treatment of the red stone torso (Pl. X) could hardly be simpler or more direct. The pose is a frontal one with shoulders well back and abdomen slightly prominent; but the beauty of this little statuette is in the refined and wonderfully truthful modelling of the fleshy parts. Observe, for example, in Pl. X, *c* and *d*, the subtle flattening of the buttocks and the clever little dimples of the posterior superior spines of the ilium. This is work of which a Greek of the fourth century B.C. might well have been proud. And yet the set of the figure, with its rather pronounced abdomen, is characteristically Indian, not Greek; and even if Greek influence could be proved, it would have to be admitted that the execution is Indian. The other statuette (Pl. XI) is of an entirely different order. It is the figure of a dancer standing on his right leg, with the body from the waist upwards bent well round to the left, both arms thrown out in the same direction, and the left leg raised high in front. The pose of the dancer, which is full of movement and swing, is shown in the accompanying sketch (Fig. 1). Although its contours are soft and effeminate, the figure is that of a male, and it seems likely that it was ithyphallic, since the *membrum virile* was made in a separate piece. I infer, too, from the abnormal thickness of the neck,[1] that the dancer was three-headed or at any rate three-faced, and I conjecture that he may represent the youthful Śiva Natarāja. On the other hand, it is possible that the head was that of an animal. Whatever it may have been, no parallel to this statuette is to be found among Indian sculptures of the historic period. Indeed, what we have to try and realize, not only about this but about the other statuette as well, is that, altogether apart from the circumstances of their finding, it is almost as difficult to account for them on the assumption that they belong to the historic as it is on the assumption that they belong to the prehistoric age. Of the influence exerted by Greek art in the North-West of India, there are hundreds of examples among the sculptures of the Scytho-Parthian and Kushān periods; but one and all are radically dissimilar from these two statuettes. They give us the form, not the substance, of Greek art. Superficially, they call to mind the Hellenistic prototypes of which they are to some extent transcripts; and they possess besides many merits of their own in which Hellenic inspiration had no part. But they miss altogether that characteristic genius of the Greek which delighted in anatomical truth and took infinite pains to express it convincingly. Now, in these two statuettes it is just

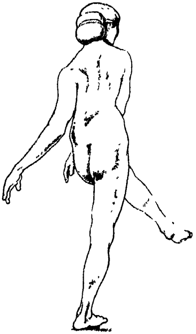
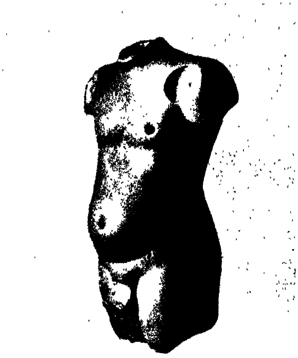


FIG. 1.—Sketch to illustrate pose of dancing figure from Harappā

[1] Experiments carried out by a skilled modeller have proved that it is impossible to fit a normal head on to this neck.



a



b



c



d

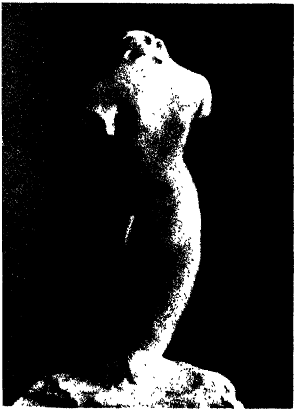
Statuette of red stone from Harappa.



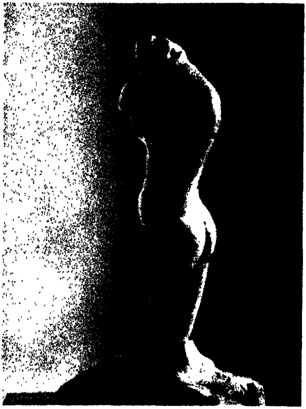
a



b



c



d

Statuette of grey stone from Harappa.

this anatomical truth that is so startling ; that makes us wonder whether, in this all-important matter, Greek artistry could possibly have been anticipated by sculptors of a far-off age on the banks of the Indus. We know definitely that the Indus engraver could anticipate the Greek in the delineation of animal forms : and if we compare the statuette of Pl. X with, for example, Seal 337, we must admit that there is a certain kinship between the two, both in the "monumental" treatment of the figures as a whole and in the perfection of their anatomical details. Experienced sculptors whom I have consulted on the subject take the view that an artist who could engrave the seal in question would have had little difficulty in carving the statuette ; archæologists will probably take another view and prefer to wait for further discoveries before committing themselves.

CHAPTER V

RELIGION

Nature and value of materials unearthed.

RELICS of a religious character are remarkably few, whether at Mohenjo-daro or Harappā. Certain structures, as we have already seen,[1] may have served as temples or religious buildings of some sort or other, but nothing now remains in them—neither shrines nor altars nor statues nor cult objects—to prove what their purpose was; nor is there a structural monument of any kind at either of these sites which can positively be said to have had a sacred character. Indeed, all that we have to go on in endeavouring to form an idea of the religion of the people is the engraved seals found in abundance among the ruins, an inconsiderable number of clay sealings and copper tablets, a variety of small figurines of terra-cotta, faience, and metal, and a few stone images in the round.

Meagre, however, as these materials are, they are beyond price to the student of Indian religion, in that they furnish the only authentic and contemporary evidence we possess regarding the religious beliefs of the pre-Āryans. Much, it is true, about these beliefs is contained in late Vedic and post-Vedic literature, and this vast storehouse of information may prove invaluable, when once it becomes possible to discriminate more clearly between what is Āryan and what is non-Āryan. Up to the present, however, the efforts made by scholars in this direction have led only to conflicting and inconclusive results, the inferences drawn by some being diametrically opposed to those drawn by others. Thus, Monier Williams and Hopkins, taking the commonly accepted view, regard the contribution made to Hinduism by the Dravidian or other pre-Āryan races as almost a negligible quantity, or perhaps even worse than negligible, since in their estimation it comprised only the most barbaric and degrading features of Hinduism.[2] Oppert, on the contrary, placed the religion of the non-Āryans on an altogether higher plane. "They believed," he writes, "in the existence of one supreme spirit of Heaven, with whom was associated and admitted to an equal, and eventually even superior share of power, the Goddess of Earth. Both ruled supreme over the good as well as the evil spirits who disturbed and tortured men; over men and the entire world. Associated with this doctrine was a belief in the transmigration of souls after death."[3] Which of these two estimates is nearer to the truth can now only be decided by

Conflict of views on pre-Āryan religion.

[1] Cf. Chap. III, pp. 22–3.

[2] Cf., for example, Monier Williams, *Religious Thought and Life in India*, pp. 57–8, and Hopkins, *The Religions of India*, p. 542.

[3] Cf. Oppert, *The Original Inhabitants of India*, p. 574. In regard to the Earth or Mother Goddess, see pp. 49–52 below. Parenthetically, it is worth remarking that Oppert connected the non-Āryan Dravidians with "the great Turanian races, which then reigned over civilized Asia, with Mesopotamia as their centre", and he traced their religious beliefs to the same source

the discovery of actual monuments of the pre-Āryan period. This it is that invests the new materials from Mohenjo-daro and Harappā with such surpassing interest—an interest that will still further be enhanced if and when the legends engraved upon many of them can be deciphered.

The Great Mother Goddess

Figurines of Mother Goddess.

Among these materials the first that demand attention are a large number of female figurines of terra-cotta, etc., of the types illustrated in Pls. XII, XCIV, and XCV. Such figurines are found both at Mohenjo-daro and Harappā, and are paralleled, as we shall see, by kindred examples from the neighbouring country of Balūchistān. Some of them, like the woman kneading dough or holding a dish of cakes in her arms (Pl. XCV, 12), are probably merely toys, without any religious meaning. Others, with children in their arms (Pl. XCV, 20) or in a state of pregnancy (Pl. XCV, 24, 29, and 30), may be assumed to be ex-voto offerings, perhaps with a magical significance, for the purpose of procuring offspring,[1] though the possibility of the latter being apotropaic in character must not be lost sight of, since it is well known that in some parts of India a pregnant woman, like a new-born child or a corpse, is regarded as taboo,[2] and that she is also peculiarly liable to be attacked by evil spirits.[3] The great majority, however, of these figurines portray a very distinctive and generally uniform type, viz. a standing and almost nude female, wearing a band or girdle about her loins with elaborate head-dress and collar, and occasionally with ornamental cheek cones and a long necklace. In many of these figurines the ear ornaments take the form of shell-like cups suspended by bands on either side of the head, while the head-dress above is more or less crescent-shaped (Pls. XCV, 6, 7, 8, and 13; XCIV, 1, 5, and 12; and XIV, 1), or ends in points as in Pl. XII, 1.[4]

Similar figurines from Balūchistān.

The figurines of the goddess from Balūchistān are of two types, both differing from those of the Indus Valley, in that they are not full length images, but consist of head and body only ending in a flat base, like many such images of Minoan and Mycenæan origin.[5] In the first type the face is pinched-in like a bird's and the goddess wears long and generally elaborate necklaces with shell or other pendants attached—features which are common also to the Indus figurines; but the hands are shown resting either on the waist or on the breasts, which as a rule are not prominent (Pl. XII, 3–5). Specimens of this type were recovered by Sir Aurel Stein at Kulli and Mehī, at the latter of which sites they were found along with other objects in Chalcolithic burials. The pottery associated with them differs in style from the common red-and-black painted ware of Mohenjo-daro and Harappā, which is also found on certain sites in Northern Balūchistān, but whether it is earlier, contemporary, or later has yet to be determined. The second type, which comes from Kaudanī, Mughal-ghuṇḍai, and Periāno-ghuṇḍai in Zhob, belongs also to the Chalcolithic Age, but is shown by the pottery accompanying it to be decidedly later than the first. In this type (Pl. XII, 6–10) the goddess wears a sort of hood over her head and a series of necklaces or torques treated very formally and sometimes appearing like a tippet or like the pectoral of the three-faced

[1] Cf. *ERE.* x, 242.

[2] Cf. *JRAI.* vol. XXIX, p. 271. This taboo can be transmitted like an infectious disease to others, unless precautions are taken against it.

[3] Cf. *ERE. ibid.*, p. 244.

[4] For fuller details of these female figurines see pp. 338 ff. *infra*.

[5] E.g. Evans, *The Palace of Minos at Knossos*, vol. ii, fig. 193, p. 340; and vol. iii, pp. 556 and 557 and Suppl. pl. xxi, where the Mother Goddess is holding up an infant, perhaps her own.

god described below. Her face, instead of being bird-like, is flat and horribly grotesque, with high forehead, cavernous eyes, and distorted mouth. Both of these legless types suggest a parallel with the later images of the Earth Goddess, in which she is portrayed half emerging from the ground, and it may be that this in fact was the idea underlying all the half or three-quarter length figurines of this goddess. While, however, there is nothing at all repulsive in the aspect of the earlier type, the later type is clearly intended to inspire horror and can hardly fail to remind us of the terrible and loathly images of the malignant Kālī, of which these figurines may be taken to be an early prototype.[1]

The Mother Goddess in Western Asia and round the Ægean coasts.

Now, it is well known that female statuettes akin to these from the Indus Valley and Balūchistān have been found in large numbers and over a wide range of countries between Persia and the Ægean, notably in Elam, Mesopotamia, Transcaspia, Asia Minor, Syria and Palestine, Cyprus, Crete, the Cyclades, the Balkans, and Egypt.[2] In some of these countries they appear later or more spasmodically than in others, but there seems little doubt that the various groups are traceable, if not directly to a common origin, at any rate to a community of religious ideas shared by the countries where they are found; and the generally accepted view concerning them is that they represent the great Mother or Nature Goddess,[3] whose cult is believed to have originated in Anatolia (probably in Phrygia) and spread thence throughout most of Western Asia.[4] The correspondence, however, between these figurines and those found on the banks of the Indus is such that it is difficult to resist the conclusion that the latter also represented a Mother or Nature Goddess,[5] and served the same purpose as their counterparts in the West, viz. either as votive offerings [6] or, less probably, as cult images for household shrines; and this conclusion is strengthened by the fact that the range of these figurines now extends practically without a break from the Indus to the Nile, over tracts that are not only geographically continuous but which in the Chalcolithic Age were united by common bonds of culture. Even, however, without the analogy of these images from Western Asia, there would be a strong presumption in favour of the examples from

[1] Kālī is portrayed with emaciated body, a garland of skulls round her neck, and her tongue lolling out from her wide mouth. Cf. *ERE.* v, 119.

[2] For the antiquity of the Mother Goddess cult in these several countries, see Myres in *Camb. Anc. Hist.*, vol. i, p. 91; Farnell, *Greece and Babylon*, pp 87–92. Whether Myres is right in stating that the cult was unknown in Babylonia until the time of Hammurabi is questionable. Langdon (*CAH.* p. 444) speaks of Nippur as being the "prehistoric seat of the worship of the Earth Mother", and De Morgan (*Prehistoric Man*, p. 250) traces the cult to a very much earlier age than Hammurabi in Chaldæa and Susiana.

[3] Also known as the "Lady of the Underworld" and Mother Earth.

[4] Myres, loc. cit., is of opinion that the cult travelled from Anatolia or Syria to Mesopotamia; De Morgan that it travelled from the latter country westward. Its existence in the Indus Valley and Balūchistān during the Chalcolithic period proves that the cult had a much wider diffusion at that period than has hitherto been supposed. Wherever its cradle, it must have been spread over the Near and Middle East in the Neolithic, if not in the Palæolithic age.

[5] Neither in the East nor in the West is it possible to affirm whether during the Chalcolithic Age these figures represent one and the same goddess or what were then regarded as a number of separate divinities with different names. But, provisionally, we are justified in regarding them as images of one great Nature or Mother Goddess, just as the countless Grāmadevatās in India to-day, though distinguished by different names, are manifestations of one and the same power. Cf. Nilsson, *The Minoan-Mycenæan Religion*, pp. 337–8.

[6] One of these figurines has her right hand raised to the forehead as if in the gesture of prayer or reverence. This particular one may represent a priestess or votary rather than a goddess; in this connection, however, it may be recalled that in the Berlin Museum there is a bronze figurine of Minoan origin with the right hand raised in precisely the same gesture, and with a triple coil of snakes falling down her back—an attribute that somewhat militates against the image being that of a votary or a priestess. Cf. Arthur Evans, *The Palace of Minos*, vol. ii, p. 507 and fig. 365.

Mohenjo-daro, Harappā, and Balūchistān being effigies of the great Mother Goddess or of one or other of her local manifestations. For in no country in the world has the worship of the Divine Mother been from time immemorial so deep-rooted and ubiquitous as in India. Her shrines are found in every town and hamlet throughout the length and breadth of the land. She is the "Mother" or "Great Mother" and prototype of the power (*prakriti*) which developed into that of Sakti.[1] Her representatives are the Grāmadevatās, the village goddesses whose names are legion and whose local attributes may vary, but who one and all are personifications of the same power.[2] Every village has its own particular goddess, to whom rich and poor alike look for protection and whose worship often takes the place of every other creed. She is as much to be dreaded as the Magna Mater; but it is she who wards off evil spirits, who is the author of fertility,[3] dispenser of life and giver of all things.[4] Nowadays, these Grāmadevatās are represented generally by rudely carved images, but sometimes by mere symbols such as a stone, while occasionally their shrines are quite empty.[5] That, like the Mother Goddesses of Western Asia, they originated in a matriarchal state of Society, is a highly reasonable supposition,[6] but, however this may be, there can be no question that they held a pre-eminent position among the national deities of the non-Āryan population.[7] This is indicated alike by the popularity of their cults among the primitive tribes, and by the fact that the leading parts in their ritual and ceremonies are taken not by Brāhmans, but by low-caste Pariahs—members of some of the old tribes who are supposed to know how to win the ear of the goddess.[8] Some of the pre-Āryan tribes have never really come within the fold of Hinduism, and among these tribes the worship of the Mother or Earth Goddess is especially strong.[9] As a fact, there is no example of the ancient Āryans, whether in India or elsewhere, having elevated a female deity to the supreme position occupied by these Mother Goddesses.[10] In Vedic mythology goddesses played only a subordinate part; the principal deities were exclusively male, and it was solely by virtue of their position as consorts of these male gods that the female deities acquired their influence. Prithivī, the Earth Goddess of the Vedic Āryans, was a figure quite distinct from the Great Earth or Mother Goddess of the older peoples.[11] She was, it is true, personified as a deity even in the Rigveda, sometimes alone, sometimes in conjunction with the Sky,[12] and she was invoked for her blessings, but

Antiquity and importance of Mother-Goddess cult in India.

Its non-Āryan character.

[1] Cf. Gustav Oppert, *The Original Inhabitants of India*, pp. 449, 450, and 504.

[2] In Gujarāt alone Monier Williams counted more than 140 of these Grāmadevatās, each with a different name, and in the Madras Presidency there are ten times as many. Cf. Oppert, op. cit., pp. 418 and 457; Monier Williams, op. cit., p. 225. She is known as Mātā, Ambā, Amma, Ambāmāī, Mahāmāī, Jagadambā Devī, and by myriad other names.

[3] The Great Mother Goddess of Asia Minor, Ishtar and Isis, appear to be definitely associated with vegetation cults. For the connection of the Indian Durgā with vegetation, see R. P. Chanda, *Indo-Aryan Races*, pp. 131–3.

[4] Cf. Oppert, op. cit., pp. 452–3 and 459.

[5] Cf. Monier Williams, *Religious Thought and Life in India*, pt. i, p. 225.

[6] Cf. Hopkins, *The Religions of India*, p. 541, where he speaks of matriarchy creeping into Hinduism from the Southern Wild Tribes; and Hall, *The Civilization of Greece in the Bronze Age*, pp. 274–5. Matriarchy was not a feature of Āryan society; whether it was ever a feature of Semitic society is a moot point. Professor Paton takes a different view from Hall. Cf. Chanda, *Indo-Aryan Races*, pp. 150–1.

[7] Oppert, op. cit., pp. 450, 451, 503, 513.

[8] Crooke, op. cit., p. 47.

[9] Cf. Gustav Oppert, op. cit., p. 436.

[10] Cf. Farnell, *Greece and Babylon*, pp. 95–6. Oppert, op. cit., p. 397.

[11] Equally impossible is it to find in the early Mesopotamian religion a parallel figure to the personal Gē or Prithivī. Farnell, op. cit., p. 114. Cf. Oppert, op. cit., p. 402.

[12] Macdonell and Keith, *Vedic Index*, ii, p. 17.

it was not until later, when Āryans and pre-Āryans had amalgamated, that her worship came to resemble that of the older Goddess.[1]

Evidence of sealing from Harappā.

Apart from the terra-cotta figurines described above and dealt with more fully by Mr. Mackay in Chapter XVIII, the cult of the Earth or Mother Goddess is evidenced by a remarkable oblong sealing from Harappā (Pl. XII, 12), on which a nude[2] female figure is depicted upside down with legs apart and with a plant issuing from her womb. This figure is at the right extremity of the obverse face. At the left end of the same face and separated from it by an inscription of six letters are a pair of animal "genii", of which I shall have more to say presently. On the reverse side the same inscription is repeated, and to the left of it are the figures of a man and woman, the former standing with a sickle-shaped knife in his right hand, the latter seated on the ground with hands raised in an attitude of supplication. Evidently, the man is preparing to kill the woman, and it is reasonable to suppose that the scene is intended to portray a human sacrifice[3] connected with the Earth Goddess depicted on the other side, with whom we must also associate the two genii, whom I take to be ministrants of the Deity. Although unique, so far as I am aware, in India, this striking representation of the Earth Goddess with a plant growing from her womb is not unnatural, and is closely paralleled by a terra-cotta relief of the early Gupta age, from Bhītā in the United Provinces, on which the Goddess is shown with her legs in much the same posture, but with a lotus issuing from her neck instead of from her womb.[4]

The Male God

Male god, the prototype of the historic Śiva.

Side by side with this Earth or Mother Goddess there appears at Mohenjo-daro a male god, who is recognizable at once as a prototype of the historic Śiva. He is strikingly portrayed on the roughly carved seal illustrated in Pl. XII, 17, which has been recently brought to light by Mr. Mackay.[5] The God, who is three-faced, is seated on a low Indian throne in a typical attitude of *Yoga*, with legs bent double beneath him, heel to heel, and toes turned downwards. His arms are outstretched, his hands, with thumbs to front, resting on his knees. From wrist to shoulder the arms are covered with bangles, eight smaller and three larger; over his breast is a triangular pectoral or perhaps a series of necklaces or torques, like those on the later class of Goddess figurines from Balūchistān[6]; and round his waist a double band. The lower limbs are bare and the phallus (*ūrdhvamedhra*) seemingly exposed, but it is possible that what appears to be the phallus is in reality the end of the waistband. Crowning his head is a pair of horns meeting in a tall head-dress. To either side of the god are four animals, an elephant and tiger on his proper right, a rhinoceros and buffalo on his left. Beneath the throne are two deer standing with heads regardant and horns turned to the centre. At the top of the seal is an inscription of seven letters, the last of which, for lack of room at the right-hand top corner, has been placed between the elephant and the tiger.

[1] Crooke, *Religion and Folklore of Northern India*, pp. 46–7.

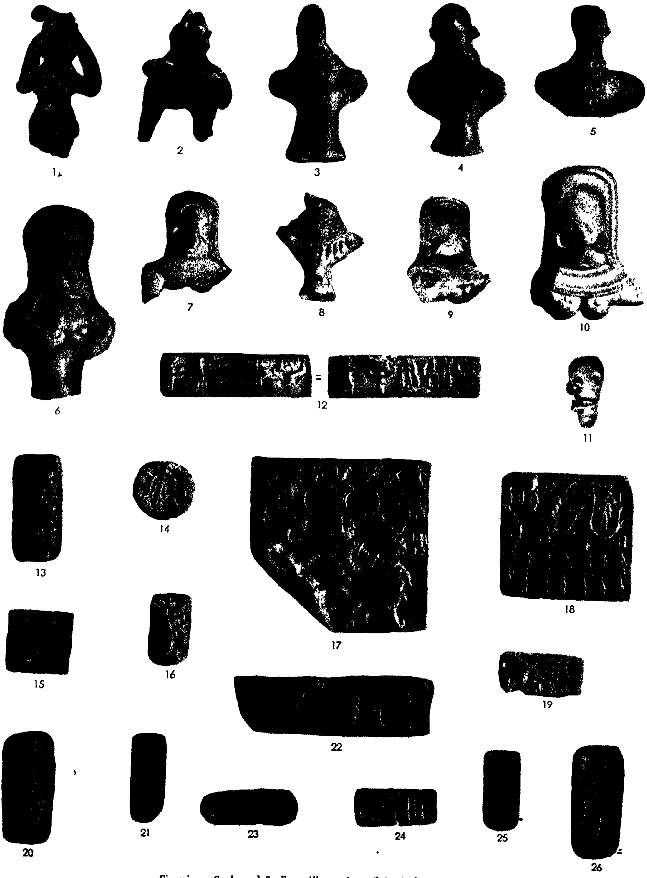
[2] In connection with the nudity of the Earth Goddess, it is worth recalling that in times of drought women are said to go to the fields at night and strip themselves naked. Two then yoke themselves to a plough, and a third drives it, calling on the Earth Mother for help. Crooke, op. cit., p. 71.

[3] For human sacrifice connected with the Mother Goddess, see Barth, *The Religions of India*, p. 204; Hopkins, op. cit., pp. 528 and 531. For the change from human to animal sacrifices, see Hopkins, op. cit., p. 204.

[4] Cf. *ASR*. 1911–12, pl. xxiii, 40.

[5] I am indebted to Mr. Mackay for permission to reproduce not only this important seal, but also the seven objects figured in Pls. XII, 18 and 22, XIII, 15, 23, 24, and 25; XIV, 3, all of which have been unearthed by him at Mohenjo-daro since 1927.

[6] Cf. above, p. 49. May this pectoral or breastplate be connected with the *kavacha* or breastplate, which with the Śāktas became an amulet against the powers of evil? Cf. Monier Williams, op. cit., p. 204.



Figurines, Seals and Sealings illustrative of the Indus Religion.

From the foregoing it will be seen that the attributes of the deity are peculiarly distinctive. In the first place, he is three-faced (*trimukha*),[1] and we are at once reminded that in historic times Śiva was portrayed with one, three, four, or five faces and always with three eyes,[2] and that the familiar triad of Śiva, Brahmā and Vishṇu is habitually represented by a three-faced image. Of the three-faced Śiva—that is, Śiva without Brahmā and Vishṇu—there is a fine example among the ruined temples of Devāngaṇa near Mount Abu,[3] and other examples are illustrated in T. A. Gopinatha Rao's *Elements of Hindu Iconography*, notably one at Melcheri, near Kāveripākkam in the N. Arcot District, another near the Gokak Falls in the Belgaum District, and a third at Chitorgarh in Udaipur State [4]; but in historic times the type was not a common one and may have been produced under the influence of the *trimukha* images representing the triad. Indeed, the question presents itself whether the three-faced deity on our Mohenjo-daro seal is not a syncretic form of three deities rolled into one. I do not mean by this that the philosophic idea of a triad associated with the doctrine of the absolute [5] had taken shape at this early period, but simply that the cult of this particular god—call him Śiva or by whatever name we like—had been amalgamated with other cults, and that the fact was signified by giving him three faces instead of one. In support of this suggestion it is to be recalled that the conception of the triad or trinity is a very old one in India,[6] though it was possibly not until the historic period that it assumed a philosophic aspect, and that it was equally old in Mesopotamia, where such triads as those of Sin, Shamash, and Ishtar or of Anu, Enlil, and Ea were long antecedent to the Āryans. In this three-faced God from Mohenjo-daro, therefore, it may be that the germ of the same idea is expressed.[7] It is more likely, however, that in the first instance the god was provided with a plurality of faces in token of his all-seeing nature; that these images afterwards suggested the *trimūrtis* of Śiva, Brahmā, and Vishṇu; and that the latter in their turn subsequently inspired such images as those referred to above.

The three-faced or three-eyed god.

The second feature of this pre-Āryan god that links him with the historic Śiva is his peculiar Yogī-like posture, with feet drawn up beneath him, toes turned down, and hands extended above the knees. Śiva is pre-eminently the prince of Yogīs—the typical ascetic and self-mortifier, whence his names *Mahātapaḥ*, *Mahāyogī*.[8] Primarily, the purpose of

Mahāyogī.

[1] Although only three faces are visible, it is possible that a fourth is to be understood at the back, as in the Maheśa images illustrated by Gopinatha Rao. Reliefs of the four-faced Brahmā are not infrequently treated in this way. The four faces of Śiva are referred to in the story of Tilottamā in the *Mahābhārata*, 1, 213, 22–8 and xiii, 141. *Lingas*—the phallic emblems of Śiva—are not uncommonly fashioned with four faces, the idea being that the god looks in all directions over the four quarters of the universe. If this is the underlying conception here, it may be that the four quarters are represented by the four animals to the right and left of the deity, just as on the capital of the Aśoka column at Sārnāth they are represented by the elephant, lion, bull, and horse.

[2] The three eyes are now supposed to denote the god's insight into the past, present, and future. Dr. A. B. Cook reminds me that the three-eyed Zeus at Argos was similarly explained as lord of sky, sea, and earth (Paus. ii, 24, 4).

[3] Cf. D. R. Bhandarkar, *Progress Report of the A.S.W.I.*, 1906–7, p. 30. Professor Bhandarkar specifically says that this is an image of Śiva, not of the Triad, but he does not make his reasons clear.

[4] Cf. pp. 380–6 and pls. cxvi, cxiv, 1, and cxviii. Mr. Gopinatha Rao also takes the famous three-headed sculpture in the Elephanta Cave to be a representation of Maheśamūrti and not of the Trimūrti, as commonly supposed. *Ibid.*, p. 382. For another example of the three-faced Śiva in a temple at Jagatsukh, 8 miles north of Nagar in Kullu, see *ASR.* 1926–7, p. 282.

[5] Cf. Keith, s.v. *trimūrti*, *ERE.* xii, pp. 457–8.

[6] Keith, loc. cit. In Indian literature the germ of the doctrine is traceable as far back as the Rigveda. Cf. Barth, op. cit., p. 180.

[7] The idea of a triad may also find expression in the three-headed animal figured on Seal 382, which is a combination of the bison, unicorn, and ibex. Cf. p. 67 *infra*.

[8] Cf. Monier Williams, op. cit., p. 83.

yoga was the attainment of union (*yoga*) [1] with the god by mental discipline and concentration; but it was also the means of acquiring miraculous powers, and hence in course of time the yogī came to be regarded as a magician, miracle-monger, and charlatan. Like Śaivism itself, *yoga* had its origin among the pre-Āryan population, and this explains why it was not until the Epic Period [2] that it came to play an important rôle in Indo-Āryan religion. Even before the discovery of this seal Rai Bahadur Ramaprasad Chanda had pointed out that the head of the male statue from Mohenjo-daro illustrated in Pl. XCVIII has its eyes concentrated on the tip of the nose, and had concluded—with remarkable intuition—that it was portrayed in an attitude of *yoga*. Probably it is the statue of a priest or may be of a king-priest, since it lacks the horns which would naturally be expected if it were a figure of the deity himself. That it possessed a religious or quasi-religious character is suggested by the distinctive trefoil patterning of its robe—a motif which in Sumer is reserved for objects of a sacral nature.[3] A deity in the same yogī attitude is also depicted on a small faience sealing from Mohenjo-daro (Pls. CXVI, 29, and CXVIII, 11), but in this case there is a kneeling Nāga to either side of him with hands uplifted in prayer.[4] Whether this deity is three-faced or not the sealing is too defaced to show, but it is noteworthy that on another seal lately found at Mohenjo-daro a deity is portrayed in the same posture with one face only. As already remarked, Śiva may be represented with one, three, four, or more faces, but that his prehistoric prototype also had a variable number of faces obviously cannot be taken for granted. It may be that the god on all three seals is one and the same, but it may also be that the *yoga* attitude was transferred to other deities as well.

Lord of the beasts.

Śiva is not only prince of Yogīs; he is also lord of the beasts (*paśupati*), and it is seemingly in reference to this aspect of his nature that the four animals—the elephant, tiger, rhinoceros, and buffalo—are grouped about him. In historic times the title *paśupati* meant "lord of cattle", and by analogy *paśu* was applied to the human herds of which Śiva was the herdsman [5]; but in the Vedic hymns *paśu* signified a beast of the jungle,[6] and it may reasonably be inferred, therefore, that at that time the deity was regarded as master of wild no less than of tame animals. Rudra, the Vedic God, whose cult was amalgamated and identified with that of Śiva, also bore the title of *paśupati*, and this may conceivably have been one of the reasons for identifying him with Śiva.[7] An instructive parallel to this aspect of the deity is furnished by the nameless god and goddess of Minoan Crete, who are frequently figured on the monuments in company with lions or leopards and have come to be known as the master and mistress of animals. The Anatolian Cybele, too, who is analogous to the Great Mother Mahādevī—the consort of Śiva—was similarly supported by lions.

Horns of divinity and the *triśūla*.

Still another attribute that helps to connect this unknown God with Śiva, though it does not amount to actual evidence of identity, is the pair of horns crowning his head. Similar horns appear on the heads of various figures at Mohenjo-daro (e.g. Pls. XII, 18, 22, and XIII, 17), as well as on the terra-cotta masks figured in Pl. XCV, 1–3. In these cases there can be little doubt that the horns have a special sacred significance. In Pl. XII, 18 and 22, they are certainly the emblem of the deity; in other cases they seem to have been transferred

[1] Cf. Hopkins, op. cit., pp. 261, 351, and 402. [2] Hopkins, *ibid.*, p. 357.

[3] Cf., for example, the dragon figured in Delaporte, *Mesopotamia*, pp. 181–2. The same ornament is also found on a small stone base recently found by Mr. Mackay at Mohenjo-daro.

[4] Cf. p. 68 *infra*.

[5] The soul, also called *paśu*, belongs to the Lord as to a master. It is conceived of as being bound by matter, as a beast (*paśu*) is bound by a fetter (*pāśa*). Cf. Monier Williams, op. cit., p. 89.

[6] Macdonell and Keith, *Vedic Index*, s.v. *paśu*. [7] Cf. Hopkins, op. cit., pp. 462–3.

to the priest or possibly to the votary. Precisely the same practice obtained at this period in Sumer and Babylonia, where horns were commonly used to denote the deity, but were also worn by kings or priests, presumably because they were regarded as incarnations or representatives of the horned gods.[1] Such horns, therefore, must not be regarded as the attribute of any particular deity or used as an argument for associating one deity with another. On the other hand, this particular pre-Āryan emblem of divinity,[2] although not generally adopted by the Vedic Āryan, did not entirely die out. In later days it took the form of the *triśūla* or trident, and in that guise continued to be a special attribute of Śiva,[3] though it was subsequently usurped by other sects as well ; notably by the Buddhists, with whom it stood for the Trinity of the three jewels [4] (*triratna*). This emblem, therefore, while of itself proving nothing definite, nevertheless provides another link in the chain which connects Śiva with the pre-Āryan religion, and to this extent supports his identification with the deity of the seal.[5]

The deer-throne.

Finally, there remain the deer or ibexes beneath the seat of the god. Two deer in a like position are portrayed on many mediaeval images of Śiva, especially when he appears in the form of *Dakshiṇāmūrti* or *Yōgadakshiṇāmūrti* ; and a deer (*mriga*) held in one of his hands is a frequent attribute of the god in other manifestations.[6] The two deer beneath the throne recall, of course, the familiar deer beneath the Buddha's throne in the *dharmacakra* scene, where they are symbolic of the deer-park, in which the first sermon was preached ; and so common, indeed, was this motif in early Buddhist India, that we might well have been excused for supposing that it was borrowed by the Śaivites from the Buddhists. It now becomes evident, however, that the motif was long anterior to Buddhism, and it seems not improbable that the Buddhists themselves adopted it, as they adopted so much else, from the popular religion of the day, as being peculiarly associated with the Yogī or the Teacher type already long established by the Śaivites.

The pre-Āryan Śiva.

We have, then, on this seal a god whose distinguishing attributes proclaim him the prototype, in his most essential aspects, of the historic Śiva.[7] Of the name of this pre-Āryan god we are in ignorance. It has been suggested that the name *Śiva* is connected with

[1] Cf. *ERE.* vi, p. 793.

[2] It may be recalled that the Dāsa demon Śushna is described in the Rigveda as horned. Cf. Macdonell, *Vedic Mythology*, p. 160.

[3] The Raudras, a sect of Śaivites, had the trident branded on the forehead ; the Jangamas, another sect, bore it on the head and carried a stone *linga*. The trident is now explained as denoting the three aspects of the god, as Creator, Destroyer, and Regenerator. Monier Williams, op. cit., pp. 81–6.

[4] I.e. the Buddha, the Law (*dharma*) and the Congregation (*sangha*). How the horns were transformed into the *triśūlas* will be readily apparent if the reader will compare the horns on the Mohenjo-daro seal with the *triśūlas*, for example, on the gateways of the Sānchī stūpa.

[5] Whether the God is intended to be ithyphallic or not is doubtful. What appears to be the *ūrdhva meḍhra* may, as stated above, be the end of the waistband drawn down in front, and unnecessarily accentuated. On the other hand, it is noteworthy that this is the manner in which Śiva's manifestation, Lakulīśa, is habitually portrayed. Cf. Bhandarkar, *ASR.* 1906–7, p. 186, and figs. 2 and 5. Hopkins, op. cit., p. 414, remarks on the all-important part played by phallic worship in Epic Śaivism, but elsewhere he expresses the view, now finally disposed of, that phallism was due to Greek influence. For a figure of Lakulīśa in a shrine at Jageśvara in the Almora District, see *ASR.* 1926–7, p. 232.

[6] For the deer beneath the throne, cf. Gopinatha Rao, *The Elements of Hindu Iconography*, vol. ii, pt. i, pp. 273–89, and pls. lxxi and lxxvii ; for the deer held in the hand, pp. 134, 136, 163, 164, 168, 174, 200, etc.

[7] Monier Williams' suggestion, op. cit., p. 71, that Śiva is an Āryan god is opposed to everything we know of the history of this cult. See Oppert, op. cit., p. 373, and R. Chanda, *Indo-Aryan Races*, pp. 126–9. The absence from this seal of the Nandi bull, habitually associated with Śiva in later times, is noteworthy. It may be that in the Chalcolithic Age the cult of the bull was still distinct, and not absorbed by Śaivism until a later date. Cf. Monier Williams, *ibid.*, p. 326.

a Dravidic root meaning "red". Whether this surmise is correct or not, it is by no means unlikely that the Sanskrit epithet of Śiva (= auspicious), applied to this god by the Āryans, bore a phonetic resemblance to his original name. On the other hand, it may be that the epithet was merely a euphemism adopted out of fear of the deity, just as the Greeks spoke of the dreaded Erinyes as the *Eumenides* ("the kindly"), or the Romans of the daughter of Faunus as the *Bona Dea*.[1] Be this, however, as it may, we shall probably not be far wrong if we infer that this pre-Āryan deity, who so closely resembled Śiva in other fundamental respects, resembled him also as a god of destruction and terror, to be propitiated by human or other bloody sacrifices, and as chief of mischievous spirits, demons, and vampires.[2] In these malignant aspects Śiva corresponds closely with the non-Āryan Aiyanar, whose shrines are ubiquitous in the South of India, and whom some authorities definitely identify with him.[3] At the same time he has many features in common with the Vedic Rudra, whose cult he subsequently absorbed; for though in the hymns of the Rigveda Rudra appears as a more beneficent deity, wise, bountiful, and easily invoked, he is none the less formidable, and many of the hymns that refer to him are concerned with deprecating his wrath.[4] Whether, like Śiva, this pre-Āryan god of Mohenjo-daro was associated with the mountains, whether he had an orgiastic side to his nature, and whether he was already regarded as a supreme but essentially personal deity, are points that must be left to future research to determine.

Iconic and aniconic worship.

A question of manifest importance presented by this seal, is whether the image portrayed on it represents an actual cult idol or merely the anthropomorphic form of the god as apprehended in popular imagination. Because a deity is imaged in human shape, it does not necessarily follow that he is worshipped in that shape. Manifold instances might be quoted of gods or goddesses being worshipped in bætylic, but conceived of in anthropomorphic, form. Even in modern India both Śiva and Vishṇu are pictured and commonly worshipped in quasi-human shape, but more commonly still they are represented, for cult purposes, by aniconic agalmata, the one by the *linga*, the mystic phallic symbol of creation, the other by the *śālagrāma*. In seeking, therefore, to interpret these monuments of a primitive and unknown religion, we must be careful not to confuse cult idols with what may have been merely imaginative representations of the deities. In this particular case, however, we are on safe ground; for the highly conventionalized type of the image, its stylized details and the fact that the kindred image portrayed on the faience sealing referred to above is being worshipped by Nāgas, clearly point to its being a copy of a cult idol. We are justified, therefore, in concluding that the people of Mohenjo-daro had not only reached the stage of anthropomorphizing their deities, but were worshipping them in that form as well as in the aniconic.

[1] In the same way, in India, the spirits of young men who have died without children are called *pitris*, "fathers." Cf. *ERE.*, s.v. Euphemism, vol v, pp. 585–6. In Mesopotamia the old Sumerian gods were retained under Semitic names (*Camb. Anc. Hist.*, vol. i, p. 529) and in Greece the pre-Āryan gods under Greek names.

[2] For Śiva as chief of the *bhūtas* and *piśāchas* cf. Barth, op. cit., pp. 164–5; as "the god that desires to kill", Hopkins, op. cit., p. 251. In the South of India, where Śaivism is most prevalent, demonolatry is also most deeply rooted.

[3] Cf. Oppert, op. cit., pp. 504–10. Aiyanar is now commonly understood as representing the Union of Śiva and Vishṇu in one, and is said to be their son. His abode is sometimes nothing more than a rude stone, surrounded by clay or terra-cotta figures of horses, elephants, buffaloes, and other animals on which he is supposed to ride.

[4] Cf. Keith, *Religion and Philosophy of the Veda*, p. 143. On the other hand, Barth regards Rudra as distinctly and mainly beneficent in the Rigveda, and holds that the more terrible aspect of his nature does not come into prominence until we reach the Atharvaveda, when his cult had already coalesced with Śiva's. Op. cit., pp. 160–3.

Saktism

From the cult of this male god at Mohenjo-daro we pass by a natural transition to the emblems of creation which are indissolubly connected with the worship of Siva ; but before doing so I must revert for a moment to the cult of the Great Mother Goddess, or rather to a particular phase of it known as Saktism. Now, of Saktism there is no direct evidence at Mohenjo-daro or Harappā. Let me be clear on that point. What evidence there is, is merely suggestive. Sakti worship was of great antiquity in India ; it originated out of the cult of the Mother Goddess ; and it was closely connected with the cult of Siva. Moreover, it exhibits features that bear so striking a resemblance to those of certain prehistoric cults in Western Asia, that we cannot pass it by in silence or ignore the likelihood of its existence among the Indus Valley people. The underlying principle of Saktism is a sexual dualism, which has been aptly described as " duality in unity ".[1] In this development of the primitive mother worship, the goddess was transformed into a personification of female energy (*śakti*) and, as the eternal productive principle (*prakriti*), united with the eternal male principle (*purusha*)[2] and became the creator and Mother of the Universe (*Jaganmātā* or *Jagad-ambā*), including the gods themselves. In her supreme form she was identified as *Mahādevī*, consort of Siva,[3] with whose worship, as stated above, Saktism became inextricably bound up ; yet she herself was conceived of as the creator of Siva and superior to him, just as her lesser emanations, the Saktis of Brahmā, Vishṇu, and the rest of the gods, were superior to their own male counterparts ; and, just as Siva combined in himself the powers of all other gods and in the eyes of his later votaries became the Supreme God (Mahādeva), so did his female counterpart become the supreme Goddess in the Sākta pantheon, reflecting in her own personality all female manifestations of the other divinities.[4] Like Siva himself she had a twofold nature. She was the power that creates and destroys ; the womb from which all things proceed, to which all return ; the mysterious force behind all appetites and passions. Like Siva, too, she was the arch-sorceress, giver of supernatural powers and magical faculties.[5] Many of the doctrines and rites that distinguish Saktism are manifestly accretions of later Hinduism and in a large measure the result of Āryan influence, but the basic elements are just as certainly non-Āryan, and are traceable to ideas of a sexual dualism which, as M. Barth has put it, were as old as India itself.[6]

Śaktism in India.

Now, a striking parallel to this Indian Saktism is afforded by certain pre-Āryan cults of the Nearer East. In Asia Minor and round the shores of the Mediterranean are found many examples of a Nature or Mother Goddess with a young, subordinate god by her side. " In Punic Africa she is Tanit and her son ; in Egypt, Isis with Horus ; in Phœnicia, Ashtaroth with Tammuz (Adonis) ; in Asia Minor, Kybele with Attis ; in Greece, Rhea

Parallels in the Nearer East.

[1] Cf. Monier Williams, op. cit., p. 180.

[2] The union of the male and female principles is typified, of course, in the combined *liṅga* and *yonī* symbols, which are characteristic of Śaivite shrines.

[3] Oppert, op. cit., pp. 412 and 413, takes the view that the veneration of the female energy is of pre-Āryan origin but independent of the Śiva cult. Barth, op. cit., p. 200, says that fully half of the Śaivite religions are characterized by the cult of an androgynous or female divinity.

[4] The worship of these Śaktis is not to be confused with the reverence ordinarily paid to the wives of the later Āryan gods. Śaktism is a religion apart. Cf. Barth, op. cit., pp. 201–2.

[5] Monier Williams, op. cit, pp. 185–6 ; Barth, pp. 202–3.

[6] Barth, op. cit., p. 200. It is noteworthy that many primitive tribes worship Śakti almost exclusively. Cf. Hopkins, loc. cit., p. 537 ; but the absence of Śaktism among the Tamils is noteworthy. R. Chanda, *Indo-Aryan Races*, p. 156.

with the young Zeus. Everywhere she is unwed; but made the mother, first of her companion by immaculate conception, and then of the gods and all life by the embrace of her son. In memory of these original facts her cult (especially the most esoteric mysteries of it) is marked by various practices and observances symbolic of the negation of true marriage and obliteration of sex. A part of her male votaries are castrated; and her female votaries must ignore their married state, when in her personal service, and often practise ceremonial promiscuity."[1] It goes without saying that some of the distinguishing traits of these cults are of a local and individual character, while others are referable to a stage of thought long posterior to the one with which we are dealing. Nevertheless, in their fundamental ideas the correspondence of these cults with Indian Śaktism is sufficiently striking. Their central figure is a Mother or Nature Goddess, who out of her own being creates her partner God, just as the Indian Mother Goddess creates Śiva, and then in union with him becomes the mother of all things. Like the Mahādevī of the Śāktas, she is at once beneficent and malignant, averter of evils but herself a dread power; ruler of passions and appetites, and mistress of magic and sorceries; and her ritual is characterized by sexual promiscuity[2] and sacrifices of a specially sanguinary character.[3] This remarkable parallelism between these cults and Indian Śaktism has long been recognized and commented on, and it has been assumed that in both cases it originated in the similar (i.e. matriarchal) conditions of society which are thought to have prevailed during the pre-Āryan Age in India as well as in the Nearer East. What was not recognized and what has only been revealed by the discoveries at Mohenjo-daro and Harappā, is that in the Chalcolithic Age India and Western Asia were closely united by common bonds of civilization. In the light of this knowledge it is time to ask ourselves whether these countries may not have been as much influenced by one another in the matter of their religions as in their material culture. If the Āryans were able to disseminate their religious ideas over half of Europe and Asia, there is no intrinsic reason why the older races who preceded them should not have done the same. As a fact, there is some evidence, as we shall presently see, of a tangible concrete connection between the religions of the Indus Valley and those of Mesopotamia.

Phallic and Bætylic Stones

Phallic emblems and bætyls.

With these parenthetical remarks about Śaktism, we may now return to consider the phallic emblems—the *yonī* and *liṅga*—which were to become so characteristic of Śaivism, and with them also the worship of bætylic stones, between which and phallic emblems it is frequently difficult to distinguish.[4]

Worship of stones in India.

In India the reverence paid to stones is as universal as it is ancient. Primarily stones

[1] D. G. Hogarth in *ERE.* i, p. 147*a*, R. P. Chanda, op. cit., p. 149.

[2] For sexual promiscuity and other excesses in Śākta ceremonial, see M. Williams, op cit., p. 196; Barth, op. cit., pp. 204–5; Oppert, op. cit., pp. 414–7.

[3] E.g. the *taurobolium*. *ERE.* vol xii, p. 214. Cf. Oppert, op. cit., p. 414, regarding the sacrifices and other practices of the *Vāmāchāris*.

[4] While it is often difficult to separate phallic from bætylic or other sacred stones, it is necessary to guard against the mistake of seeing a phallic meaning in sacred stones where none in reality exists. Some writers, for example, have sought, without reason, to find a phallic origin in the *omphalos* of Apollo at Delphi, in the black stone of the Ka'abah at Mecca, in the famous conical cult-stones of Emesa and Pessinus, in the *maṣṣebhāh* and *aṣherāh* of the Semites, and even in the English maypole.

were worshipped because of their peculiar appearance or some weird or uncanny feature that distinguished them from other stones ; then, in the animistic stage, they came to be regarded as the habitation of a spirit ; and eventually, with the development of iconism, they took shape as idols. Even to-day, however, the worship of aniconic stones, both natural and worked, plays an important rôle. They serve as watchmen [1] of the cross-roads ; they guard the villages and fields from evil spirits ; they ensure good crops and avert or cure diseases among men and cattle ; in birth and marriage rites they have a very special place ; and they provide a resting place for the spirit of the departed. In the shape of the *śālagrāma* [2] they are the embodiment of Vishṇu ; in the shape of the *linga* and *yonī* of Siva and Mahādevī or of the creative principles of life.[3] Frequently they are in their natural state (*śvayambhū*), untouched by hand [4]; at other times they are crudely shaped, and at others finely chiselled and highly conventionalized ; but whether worked or unworked, they are reverenced either for some inherent virtue of their own or because they are permeated with the spirit of a deity.[5]

Prehistoric lingas in the Indus Valley and Balūchistān.

Now, at Mohenjo-daro and Harappā there are three classes of aniconic objects generally of stone but occasionally of other materials also, that claim attention. The first class comprises those of the type illustrated in Plates XIII, 3, and XIV, 2, 4, and 5. Two of these (Pl. XIV, 2 and 4) are unquestionably phalli, more or less realistically modelled, and prove conclusively that phallism in India had a pre-Āryan origin, thus disposing once and for all of the fantastic theory that it was introduced into India by the Greeks or other Western invaders. Further evidence on the same point is furnished by two realistic specimens of the same kind—one a *linga* or *phallus* (Pl. XIII, 1) and the other a *yonī* or *vulva* (Pl. XIII, 7), which Sir Aurel Stein found on chalcolithic sites in Northern Balūchistān, the former at Mughal Ghuṇḍai, the latter at Periāno Ghuṇḍai. The other objects in this class (Pls. XIII, 3, and XIV, 5) [6] are more conventionalized in shape, and their character, therefore, is not so obvious. They vary in size from half an inch to a foot or thereabouts in height, and are made generally of limestone or alabaster, but the miniature ones are also made of shell, faience, and paste, the last mentioned being sometimes coloured to simulate carnelian. These miniature specimens might have served as gamesmen, but the larger specimens are much too heavy for that purpose, and their shape does not suit them for use as weights ; nor is there any other utilitarian purpose that can be suggested for them. Indeed, the only explanation applicable to them all is that they were sacred objects of some sort, the larger ones serving as aniconic agalmata for cult purposes, the smaller as amulets to be carried on the person, just as miniature *lingas* are commonly carried by Śaivites to-day. And that these objects were, in fact, *lingas* seems highly probable from their shape, which

[1] *Muthiyā deo* (the divine watchman) is a common name of the stone of the cross-roads ; *bhainlāsur* (the buffalo god) of the guardian stone in the fields. Cf. Crooke, *ERE.* xi, p. 872.

[2] For the *śālagrāma* stone, see Oppert (op. cit., pp. 338–58), who opines that, long before it was identified with Vishṇu, it had been an object of worship with the aborigines and regarded as an emblem of female energy.

[3] In the domestic chapels of orthodox Hindus, especially among the Marāthas and the Smārta Brāhmans of the South, five consecrated stones are commonly found, viz. the *vāna-linga* of Śiva, the *śālagrāma* of Vishṇu, a metallic stone symbolizing the female principle (Śakti) or Pārvatī, a crystal representing the Sun, and a red stone representing Gaṇesh. Cf. Monier Williams, op. cit., pp. 69 and 392 ; Thurston, *Castes and Tribes of Southern India*, vol. i, p. 315 ; and *ERE.* xi, 872.

[4] Cf. Crooke, op. cit., p. 319.

[5] The idea of stone being animate or permeated with a soul presents no difficulty to the Hindu mind, which believes that metempsychosis does not stop at animal existence, but that any natural object may have a soul and may become the abode of even the divine soul. Cf. Monier Williams, op. cit., p. 339.

[6] Cf. also Pl. CLV, 16–23 and 25.

in spite of its conventionality, inevitably calls to mind the *liṅga* from Mughal Ghuṇḍai (Pl. XIII, 1). In mediaeval and modern India it is only very rarely that *liṅgas* take at all a naturalistic form. Ninety-nine per cent of them are so conventionalized that most people would find a difficulty in recognizing their phallic character (cf. Pl. XIII, 8).[1]

As a fact, the resemblance between the stone objects under discussion and the Mughal Ghuṇḍai *liṅga* is closer than at first sight appears. Some of the former (Pl. XIII, 2) differ from their fellows in that they consist of the upper part only and are provided with small holes (visible in the photographs), as if they had been attached to a base of some sort.[2] Now, the same characteristic is observable in the *liṅga* from Mughal Ghuṇḍai, but in this case the material of which it is composed is terra-cotta instead of stone, and the base or whatever it was to which it was attached was made in one piece with it, and has been broken off at the juncture. On the analogy of the Śiva *liṅga* this base may be assumed to have been a *yonī*; and it is a reasonable inference that *yonī* bases were also affixed to the stone pieces exemplified in Pls. XIII, 2, and CXXX, 21 and 23, the bases perhaps taking the form of the ring stones described below.

Parallels in Assam.

An instructive parallel to these phallic-like objects is afforded by the so-called "chessmen" pillars of Dīmāpūr and Kāsomārī Pathar in Assam, which are believed to be memorial stones erected in memory of local heroes and which the late Dr. Bloch ascribed to a non-Āryan people. That these chessmen columns were originally phallic monuments is suggested by the fact that in the non-Āryan districts of the south the custom still obtains, or did so until recently, of erecting *liṅgas* on the graves of local heroes. It should be added, however, that along with the chessmen pillars in Assam, other pillars of a different type are found, some V-shaped, some like buffalo horns.[3]

Bætylic stones.

The stones of the second class (Pls. XIII, 4–6, and XIV, 3 and 7) are even more varied in size than those of the first, some of the larger specimens being as much as 2 to 3 feet in height. In shape they are like many of the *liṅgas* seen in Śiva temples to-day, and have been taken to be such by most of the Hindus who have seen them. We must not, however, allow this resemblance to mislead us. They may be phallic in character. There is nothing to prove that they are not. But prima facie it is unlikely that the phallic emblem would have been conventionalized in two different forms in the Indus Valley, and if a choice has to be made between the first and second classes of these objects, the shape of the former clearly gives them more title to be regarded as phallic than the latter. Moreover, though they resemble the Indian *liṅgas*, they equally resemble the bætylic stones of Western Asia, such as the Semitic *maṣṣebhāh*, to which there is no reason to attach any phallic meaning,[4] and it would be in no way surprising if these bætylic cults of the Near and Middle East, as well as those of the Mother Goddesses discussed above which appertained to this same cultural area, proved to have a closer connection than that arising out of a mere community of social customs. We need not, however, go so far afield as

[1] This and Fig. 13 on the same Plate are modern miniature *liṅgas* and *yonīs* carried as amulets.

[2] Mackay suggests that these particular stone pieces may have been capitals of columns superimposed on wooden shafts, but this suggestion fails to take account of the curved and finely dressed protuberance on the top, which would be incomprehensible if an architrave was intended to be bedded on it.

[3] Cf. T. Bloch, "Conservation in Assam," *ASR* 1906–7, pp. 22–3 and fig. 3. Dr. A. B. Cook tells me that "grabphalli" in the shape of chessmen or balls on pillars are found in Phrygia used as gravestones on tumuli (A. Koerte in *Ath. Mitth.* 1899, xxiv, 6 ff., and pl. 1, 1), and that they occur also in Etruscan art either as grave *stelai* or as boundary stones.

[4] A good example of such bætylic stones has recently been unearthed in the temple of Mekal at Beisan (*Daily Telegraph*, 13th April, 1929); another was the world famous *omphalos* at Delphi.



Lingas, Yonis, and other objects illustrative of the Indus Religion.

Western Asia to find parallels for this bætylic worship, since in India itself bætylic stones, such as those which guard the fields and crossways, are just as numerous as phallic ones and are common objects of worship with the primitive tribes, among whom they are specially associated with the Mother Goddess.[1] The only reason, therefore, for interpreting the Mohenjo-daro examples as phallic rather than bætylic is that their conical shape is now commonly associated with that of the *liṅga*. In reality, however, this point is a negligible one; for nothing is more likely than that, as Śaivism developed, it largely absorbed the older bætylic worship and appropriated its symbols to phallic worship. This would explain why the vast majority of mediaeval and modern *liṅgas* are fashioned more like bætylic cones than phalli.

Miniature specimens as amulets and possibly gamesmen.

The interpretation of these two classes of stones suggested above does not preclude the smaller examples, which are made of faience, bone, shell, and ivory, as well as of stone, having served as gamesmen. The use of phalli as protective and apotropaic amulets or as luck-bringing talismans is world-wide, and as common in India[2] as it was, for example, in the Roman world, or as it still is, for the matter of that, in Italy. Whether in the days of Mohenjo-daro they were also endowed with apotropaic or lucky virtues, we are unaware, but, assuming that something of the same idea attached to them then as in historic times, nothing would be more natural than that the pieces used in games of chance or skill should be fashioned after the same model and thus bring luck to the players. And the same argument would, of course, apply equally to the miniature models of bætylic cones. This, however, is a surmise based on mere assumption, since at present we have no proof that any of these objects were used for games, though their resemblance to Egyptian gamesmen undoubtedly warrants that inference.

Ring-stones.

The third class of these stone objects comprises ring-stones of the types illustrated in Pls. XIII, 9–12, and XIV, 6 and 8. These ring-stones are found in large numbers at both Mohenjo-daro and Harappā. In size they range from half an inch to nearly four feet in diameter. All the larger specimens are of stone; the smaller ones of the same material or of faience, shell, or imitation carnelian. The most typical of them have their upper and lower surfaces undulating (Pls. XIII, 9 and 10, and XIV, 6 and 8); in others, the lower surface is flat, and the top takes a quatrefoil form (Pl. XIII, 11 and 12). An explanation of these ring-stones that has been suggested to me by Mr. Henry Cousens is that they were threaded on poles to form columns, but this suggestion leaves out of account the smaller specimens, some of which are no bigger than finger rings and obviously could not have served as architectural members.

Not to be explained as stone money.

Another suggestion, but an equally unlikely one, is that they were stone money similar to the stone wheel-money in use on the islands of Uap in the Carolines. This stone money consists of large solid wheels or discs of limestones or aragonite "quarried and shaped in Babelthuap, one of the Pelew islands, 400 miles to the southward. They vary in diameter from one foot to twelve feet, and each of them has in the centre a hole for the insertion of a pole sufficiently large and strong to bear the weight and facilitate transportation. They are known as *fei*. The limestone of which they are composed, to be of the highest

[1] It may be recalled that there is a representation of the Phrygian Mother Kybele, showing her in human form in all other respects but with a head fashioned like the round top of a bætylic pillar, and there can be little doubt that she was once worshipped in that aniconic form. Cf. Farnell, op. cit., pp. 63–4.

[2] Miniature *liṅgas* made of stone, glass, and other materials are frequently carried by Śaivites, and invariably by members of the Śaiva sect of Liṅgāyats, who wear them in a little casket suspended round the neck. In Babylonia the phallus was employed as an amulet from the second millennium onwards. One of the royal chronicles of about 1100 B.C. is inscribed on a tablet in the form of a phallus. Farnell, op. cit., pp. 229–30.

value, must be fine, white, and of close grain. They are cut as nearly circular as primitive resources permit. The hole in the centre is roughly about one-sixth of the total diameter. From their size and weight they are frequently not capable of being stored in the native houses ; and since they are not easily stolen, they are (perhaps more often than not) kept outside. Thus, as one traveller says, 'they are more for show and ornament than for use.' The houses of the richer men, and the *failu* or *pabai*, the men's house where the men live and hold their councils and assemblies in every village, have their fronts adorned with *fei* that testify to the wealth of the inmates. The value depends not only on size, but also on the quality of the material."[1] This wheel-money of Uap undoubtedly presents a striking parallel to the larger class of ring-stones of the Indus Valley, and for this reason I have quoted the above extract at length. Like the previous one, however, this explanation does not take account of the smaller ring-stones, many of which are obvious replicas of the larger ones and may be presumed, therefore, to be of the same character. And there are other inherent objections also. In the Indus Valley stone was doubtless a rare commodity, but in the Chalcolithic Age it could not have been of such rarity as to warrant its being converted into money, nor is it credible that people who had reached the advanced stage of cultural development evidenced at Mohenjo-daro and who were in close commercial and other relations with countries as far distant as Persia and Mesopotamia, would have resorted, even for local purposes, to so cumbrous a medium of exchange. It is conceivable, no doubt, that at a much earlier and more primitive stage stone might have done duty as money ; and we may believe, too, that this money would come to be regarded as a sign of wealth and power, as it is in the island of Uap, and been retained as such until a relatively late date. In such matters India has always been peculiarly conservative, and the possibility of this having happened cannot be entirely set aside. All things considered, however, a more reasonable and adequate explanation of these ring-stones is to be found in the magical properties which holed and ring-stones have from time immemorial been supposed to possess and in the universal awe in which they are held in India, whether as fetishes or as actually imbued with a divine spirit. A well-known example of this class of stones is the Srīgundi stone at Malabar Point, near Bombay, which is supposed to purify those who crawl through it of sin or sickness. It was through this stone that Sivajī crept to purge himself of the murder of Afzal Khān, and others of the Marātha Peshwas followed his example.[2] Another famous one is at Satrunjaya, the hole in it being known as *muktidwāra* (door of absolution), through which anyone who can creep is assured of happiness.[3] These and other stones of the same class are definitely regarded as *yonīs* or female symbols of generation,[4] the idea being that those who pass through them are, as it were, born again, while in the case of the smaller stones of the same form the mere passing of the hand or finger through them is an act of special virtue or significance. That the same idea attached to ring-stones as far back as the Mauryan period is evident from several examples of them of that date which I recently unearthed at Taxila (Pls. XIII, 14 and CLIX, 9 and 10). In these ring-stones, which are quite small and used perhaps as ex-voto offerings, nude figures of a goddess of fertility are significantly engraved—with consummate skill and care—inside the central hole, thus indicating in a manner that can

Magical properties of ring-stones.

Ring-stones at Taxila associated with goddess of Fertility.

[1] Cf. *ERE*. vol. ii, p. 869 ; W. H. Furness, *The Island of Stone Money*, 1910, p. 93 ; F. W. Christian, *The Caroline Islands*, 1899, pp 236, 256 291. Since the above was written Dr. A. B. Cook has drawn my attention to the fact that relatively small discs of quartz and sandstone pierced with a hole in the centre were once used for money in Togoland.

[2] Cf. Crooke, op. cit, p. 322. *Gazetteer of Bombay City*, 1909–10, ii, 360.

[3] *ERE* ii, 874, and A. K. Forbes, *Ras Ma'a*, p. 574. For other examples the reader may consult Crooke, op. cit., and *FRE*. ii, p 874.

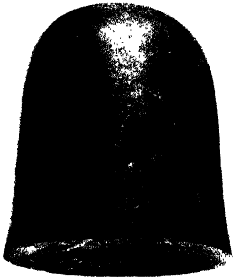
[4] Cf Crooke, op. cit, p. 322



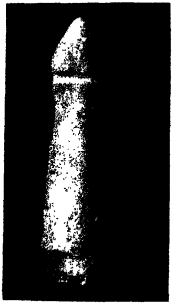
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8

Lingas, Baetyls, Ringstones etc. illustrative of the Indus Religion.

hardly be mistaken the connection between them and the female principle.[1] These rings, it is true, carry us back no further than the third century B.C., between which and the Chalcolithic Age there is a very wide margin of time. Indeed, were there no direct evidence of *yonī* and *linga* worship having been practised in that age, I should hardly venture to use them as an argument. That, however, is not the case. We have already seen that the presence of phallism at Mohenjo-daro is proved by the discovery of realistic *lingas*, as to the character of which there is no question; and that in the neighbouring country of Balūchistān the worship of the *yonī* is similarly attested at Periāno-ghuṇḍai. We are justified, therefore, in supposing that the ring-stones found at Mohenjo-daro may have had the same cultural, fetish or magical significance that the ring-stones of a later date had. We cannot yet prove that they possessed it, but the hypothesis is reasonable, and it is the only one yet advanced that adequately explains these curious objects. We must not, of course, infer that each and every holed stone found on this site was of the same character. That would obviously be absurd. We are concerned only with those ring-stones for which no utilitarian purpose can be suggested and for which no other adequate explanation is forthcoming.

Summary of foregoing.

To conclude these observations on stone worship, I distinguish three types of cult stones at Mohenjo-daro and Harappā—the bætylic, the phallic and the *yonī* ring-stones. Each of these types is represented by numerous examples, both small and large, the former much predominating over the latter. The larger specimens I take to be objects of cult worship; the smaller ones to be amulets for carrying on the person, just as miniature *lingas* and *yonīs* are still commonly carried (cf. Pl. XIII, 8 and 13), but it is not unlikely that some of the smaller specimens may also have served as gamesmen. Whether these three types represent three distinct cults is uncertain; but it is not unnatural to suppose that *linga* and *yonī* worship may have been associated then, as they were later under the aegis of Śaivism. On the other hand, it is probable that they were originally quite distinct from bætylic worship, which is found frequently connected with the cult of the Mother Goddess among the oldest tribes, whereas phallism is rarely, if ever, found among these aboriginal people.

Tree-Worship

Tree-worship and epiphany of tree goddess.

That the animistic conceptions which have distinguished the worship of trees throughout the historic period were common also to the Chalcolithic Age is clear from several seals and sealings. One of the most interesting of these is that reproduced in Pl. XII, Fig. 18, in which the epiphany of the deity in the tree is portrayed in a half realistic, half conventional way. The tree itself at the right-hand top corner of the seal is represented by two branches only springing from a circle on the ground, and treated in a formal fashion.[2] Between them appears the deity: a standing nude figure, with long hair, *triśūla*-horns and armlets,[3] recalling those of the three-faced image discussed above. In front of the tree is the half-kneeling figure of a suppliant, also with long hair, armlets and horns, but with the addition

[1] That ring-stones of this type had a wide vogue in ancient India is shown by the discovery of another specimen at Saheth-Maheth (Śrāvastī) in the United Provinces, and by the fact that they were copied by the Buddhists, though with this difference that the nude figures of the goddess were eliminated.

In the *Śrī-chakra* or holy circle—a *yantra* of the Śāktas—which represents the orb of the Earth, the centre is occupied by the drawing of a mouth or *yonī*, supposed to typify the female energy (*śakti*) presiding over the circle. Monier Williams, op. cit., pt. i, p. 203.

[2] On other seals, e.g., Pl. XII, 13, 14, and 19, the tree appears conventionalized into the form of an arch surrounded by leaves, in which the deity is framed, as if standing in a shrine.

[3] The armlets, in this case, are indicated by very faint scratchings across the arms.

of a leaf-spray or plume between the horns. Behind this suppliant is a composite animal, part bull, part goat (?), with human face, of a type commonly met with at Mohenjo-daro and Harappā. In the field below is a line of seven small standing figures, with dresses reaching to the knees, with a long plait of hair falling down the back, and a plume on the head. From its leaves the tree appears to be the pipal (*ficus religiosa*)—a tree which is still an object of universal worship throughout India, which no Hindu would willingly cut or injure, and beneath the shade of which he would be reluctant to tell an untruth.[1] This is the tree of knowledge (*bodhi-* or *bo*-tree), under which the Buddha gained enlightenment. Whether it was regarded as a "tree of knowledge" at Mohenjo-daro we have no means of knowing. The conception of a "tree of knowledge", like that of a "tree of life", is traceable to a very early age in Mesopotamia and may well have been equally ancient in India.[2] The sacred cedar of the Chaldeans was not only the tree of life, but the revealer of the oracles of earth and heaven, and the name of Ea, the God of Wisdom, was supposed to be written on its core.[3] This point is not without significance, because the pipal tree, which in India is *par excellence* the Tree of Wisdom, is conventionalized at Mohenjo-daro and Harappā in a manner that can hardly fail to remind us of the schematized "Tree of Life" in Babylonia. An illustration of such conventional treatment is afforded by seal No. 387 on Pl. CXII. Here the tree springs from the jugate heads of two "unicorns", the same animals that are most commonly represented on the seals, and it is permissible to surmise that this particular animal may have been closely associated, perhaps as her *vāhanam* or vehicle, with the Goddess of the pipal tree. The association of animal *vāhanas* with tree spirits (*yakshīs*) is a phenomenon that meets us at every turn in Hindu and Buddhist iconography, and there can be no doubt that it was traditional from pre-Āryan times.[4]

Trees of wisdom and life.

Interpretation of sealing with epiphany of tree goddess.

The nude deity[5] appearing between the branches is very small and roughly portrayed, but the absence of any evidence of male sex, coupled with the fact that tree deities in India are usually female[6] and that the ministrant figures on this seal also appear to be women, all point to its being a goddess rather than a god. As to the human-headed composite animal standing behind the suppliant, its meaning is not altogether clear. On some other seals whereon a similar scene is portrayed, its place is taken by a goat or other horned animal, which sometimes stands behind the suppliant, sometimes between the suppliant and the deity, and which might therefore be taken as a sacrifice destined to be offered to the deity (Pl. XII, 15, 19, and 22). That the animal, however, is not a sacrificial one, is clearly proved by this seal, where it is of a mythical composite nature. My own view is that this animal stands in some such relation to the votary as does the Intermediary deity on Mesopotamian seals, where he is frequently represented in anthropomorphic form taking the votary by the hand and presenting him or her to the higher deity[7]; in other words, I suggest that

Seal from Harappā.

[1] Cf. Monier Williams, op. cit., p. 336.

[2] Cf. Nilsson, op. cit., p. 548.

[3] The two ideas were so closely interwoven that there is reason to suspect that in an earlier version of the Eden story there was only one tree, as there is in most of the Paradise myths. *ERE* xii. 455–6.

[4] Typical examples are found on the railings of Bharhut and Sānchi (second–first century B.C.) where the *yakshīs* are portrayed standing on their animal *vāhanas* and clasping the tree with arms and legs, their poses indicating that they are part and parcel of the trees.

[5] It may be recalled that in days gone by it used to be a custom for women to walk naked round a pipal tree in order to gain fertility. Crooke, op. cit., p. 408.

[6] Witness, for example, the countless figures of *yakshīs* on sculptures of the Early School. But that tree spirits may also be regarded as male is shown by the marriage of virgin brides to trees, as well as the intermarriage of one tree to another. In ancient Greece and Italy the tree-spirit was essentially female.

[7] This motif is characteristic of the age from Gudea to Dungi, but disappears after the kings of Ur. *Camb. Anc. Hist.* i, p. 453. Delaporte, *Mesopotamia*, pp. 160–1.

this composite human-headed animal is a protecting local divinity of a minor type accompanying the suppliant into the presence of the Tree goddess. What the small object is near the feet of the suppliant is uncertain, as the seal is slightly damaged at this point ; possibly it is an offering to the deity on a small altar, or possibly an incense table. The seven figures in a line at the bottom I take to be female officiants or ministrants of the goddess. The plumes on their heads might be feathers[1] ; but it is more probable that they are small branches, such as in Kāfiristān are still worn on the head by officiants at the worship of the *chili* or Himālayan pencil cedar (*Juniperus macropodes*), when branches are also burnt in honour of the tree spirit.[2]

Worship of trees in natural form.

On certain sealings from Harappā (e.g. Pl. XII, 16, 20, 21, 25, and 26) various sacred trees are represented which the artists have been at some pains to differentiate one from another, but the workmanship is too minute for the several species to be identified with confidence. A point of some interest, however, is that two at least of the trees on these sealings spring from what appears to be either an enclosing wall or railing such as commonly encircle the roots of sacred trees on later reliefs of the historic period, and were regarded as almost indispensable symbols of their sanctity.

Parallels at Bhārhut and Sānchī.

Thus, we have at both Mohenjo-daro and Harappā two forms of tree-worship represented ; one in which the tree itself is worshipped in its natural form, the other in which the tree spirit is personified and endowed with human shape and human attributes. This is precisely what we find also in the sculptures of Bharhut and Sānchī and others of the Early Indian School, but there is this difference that, whereas in the later monuments the tree spirit[3] appears in a subordinate rôle as a dryad (*Yakshī* or *Yoginī*), in the earlier she seems to have been already elevated to the position of an important goddess.[4] This, indeed, is what might naturally be expected ; for tree-worship was essentially a characteristic of the pre-Āryan, not of the Āryan population,[5] and the tree spirit must have loomed far more important in prehistoric days among the peoples who originated this worship than it did later in an Āryanized India, where tree-worship inevitably became subordinated to alien or semi-alien cults. The personification of trees, or, indeed, of any natural object, has never presented any difficulty to the Indian. In accordance with his ideas of metempsychosis every tree and plant has a personality and soul of its own, and is treated, therefore, as a conscious human being. Thus, for example, it is usual before cutting a tree to ask the pardon of the indwelling spirit ; and the non-Āryan Gonds will not shake a tree at night or pluck its fruit for fear of disturbing the sleeping spirit.[6] Indeed, the process of anthropomorphizing is carried even further than this among many non-Āryan tribes, brides being married to a

Personification of tree spirits.

[1] For feather plumes at Knossos cf. Evans, *The Palace of Minos*, vol. ii, pl. xiv and p. 775 sq.

[2] Crooke, op. cit., p. 414. This tree is highly valued by the Kāfirs for its protective powers.

[3] *Yakshas* and *Yakshīs* are ranked usually below the *devas*, but above goblins and ghosts (*prētas* and *bhūtas*), though sometimes they are not distinguished from the former. Cf Coomaraswamy, *Yakṣas*, p. 6.

[4] For widespread and important cults that are essentially connected with tree-worship compare that of Zeus and his oak at Dodona, Zeus and his wild-olive at Olympia, Athena and her olive at Athens, Apollo and his bay at Delphi, Artemis and her oak at Ephesus, Diana and her sacred tree at Nemi, etc.

[5] Tree-deities play a very insignificant part in the Rigveda and Atharvaveda. In Buddhist literature and monuments (which embody much that is non-Āryan) they are " more closely connected with human life than any other lower deities ". Macdonell, *Vedic Mythology*, p. 154 ; Oldenberg, *Die Religion des Veda*, 259–61.

[6] Crooke, op. cit., p. 401. Tree-worship is a marked feature of Śaktism. The first duty of a Śākta on rising in the morning is to salute the Kula trees. Chanda, *Indo-Aryan Races*, p. 135.

tree before being united to their husbands[1]; trees also may be solemnly married one to another[2]; and the sacred tulsi plant is annually wedded—often with elaborate ritual and costly feasting—to the *śālagrāma* stone.[3] In such cases as these it is the tree itself that is personified as a deity and becomes an object of worship; and there can be no doubt that such personification is illustrated on our Indus seals; it is well to remember, however, that according to present-day notions a tree can also be tenanted by some alien deity, or, maybe, by the spirit of a man or even of an animal,[4] and not infrequently by a malignant spirit or demon, though whether these notions prevailed in prehistoric times we do not know.[5]

Animal Worship

Zoolatry.

The evidence at Mohenjo-daro for zoolatry (in which I include reverence paid to animals as well as actual cult worship) is far more abundant than for that of tree-worship. Most of it is furnished by the engravings on seals and sealings, but these are supplemented by a variety of small terra-cotta, faience and stone figurines and a few stone idols of larger size. The animals represented fall into three classes, viz. (*a*) those of a definitely mythical character; (*b*) those whose mythical character is questionable; and (*c*) those belonging to natural species. In the first of these classes are comprised various kinds of therianthropic beasts. One of them, which I take to be a human-faced goat or ram,[6] or possibly a more composite creature still, part goat or ram, part bull and part man, we have already seen figuring in a cult scene of the Tree goddess, where I suggested that it was a minor tutelary deity accompanying the votary into the presence of the goddess. Be this explanation correct or not, we may be quite sure that this human-faced creature is not intended as a sacrificial victim, but represents some therianthropic deity or "genius", and we may affirm the same of the other animals depicted in similar scenes, but with this difference, that some of them have not yet been partly metamorphosed into human shape. A parallel to them may be found in the human-headed lions of Mesopotamia, which figure so prominently in Assyrian art, and which have generally been interpreted as genii, but which in one of the cuneiform inscriptions detailing certain types of deities[7] are described as actual gods.

Mythical and composite creatures.

Closely akin to them, but of more complex form, are the composite creatures—part ram or goat, part bull, and part elephant—with human countenance, figured on seals 378, 380, and 381, and apparently represented also in the stone images in the round illustrated in Pl. C, 7 and 9. Such stone images can hardly have been other than cult objects intended

[1] Hewitt in *JRAS* 1899, pp 338–9; Crooke, op. cit., pp 416–17. According to Hewitt, Mariamma, the great Mother Goddess of South India, was a tree goddess. The practice of marrying brides to a tree he traces to matriarchal conditions, when true marriage was not recognized. According to Crooke, the idea behind these marriages is to bring the bride and bridegroom into close association with the fertility of nature.

[2] Cf Oppert, op. cit, p. 492

[3] Hopkins, op cit., p. 540.

[4] Monier Williams, op. cit., p. 331; cf. E. Clodd, *Animism*, p. 74; *ERE*. xii, 449.

[5] The existence of malignant and benignant spirits side by side may well be the outcome of race fusion, the deities of a subject race being often regarded as malignant. Cf. *ERE*. xii, 452.

[6] The waved horizontal horns of this animal are characteristic of the goat in Mesopotamia. Cf. Ward, *The Seal Cylinders of Western Asia*, No. 1251, p. 364. But in Egyptian hieroglyphs they are distinctive of the long-horned ram.

[7] Cf. Farnell, op. cit., pp. 52–3.

for worship ; on the other hand, the seals, like most of the seals found at Mohenjo-daro and Harappā, were almost certainly amulets which, we may surmise, were used by the votaries of this curious syncretic form of deity. Another chimera-like creature is that portrayed on Seal 382, the three heads of which resemble those of the " unicorns " to be described anon, but are distinguished by varying kinds of horns, the lowest being those of a bison, the uppermost those of an ibex, while the middle ones are those of an ibex curved forward instead of backwards. On another recently found seal from Mohenjo-daro (Pl. XIII, 24) the lowest of the three heads is definitely that of a bison, the second that of a unicorn, and the third that of an ibex with horns reversed.[1] Intimately related also to these three-headed chimeras are the motifs of the five- or six-limbed *svastikas* terminating in various kinds of horned heads (e.g. Seal 383), or occasionally with one limb only terminating in a " unicorn " head, and the others left blank (Pl. XIII, 25). With them may also be linked the triple, interlaced tigers of Seal 386, which may be supposed to embody the conception of a triply-powerful demon, though, on the other hand, it may be nothing more than a fanciful design of the kind that Indian imagination has always delighted in.

Resemblance of half-bovine creature to Sumerian Eabani or Enkidu.

In the category of therianthropic deities or demons must also be included the semi-human, semi-bovine creature attacking a horned tiger on Seal No. 357 (with which compare Pl. XIII, 17, reproduced from the actual seal) and illustrated also on Seal 356. The presence of this particular form of creature at Mohenjo-daro is of more than usual interest, because of the undeniable resemblance it bears to the Sumerian Eabani or Enkidu—the half-man, half-bull monster, whom the goddess Aruru created to combat Gilgamesh, but who afterwards became his ally and with him fought against the wild beasts.[2] In view of this close resemblance, it is worthy of remark that the representations of Gilgamesh and Eabani fighting wild beasts are among the earliest motifs of Mesopotamian glyptic art, going back—according to Ward—to the beginning of the fourth millennium B.C. This does not, of course, prove that the conception of a hero or god with half-human, half-bull form and bison's horns originated in Mesopotamia. It may have done so ; but, until we know more of prehistoric Indian and Persian antiquities, it would be rash to jump to any hasty conclusion on the point. The same remark applies to the use of horns as a symbol of divinity, as exemplified on the seals referred to above and on the terra-cotta masks illustrated in Pl. XCV, 1–3. This usage had its origin no doubt in primitive animal worship, the horns alone being retained when the Animal god assumed human shape, and afterwards becoming a badge, as it were, of superhuman prowess, which might be transferred to any other deity or hero or demon, whether of animal origin or not. The custom, however, was so world-wide[3] that we may be sure it arose independently in many different centres, and, even as regards India and Mesopotamia, it would be unsafe to take it for granted that one country borrowed it from the other. On the other hand, the fact that bison's horns are used for this purpose in both these areas certainly suggests that the custom in their case sprang from a common source. Now, according to Ward,[4] the bison was not found in the valley of the Tigris and Euphrates, and he infers accordingly that the people who introduced its horns as a symbol

Horns a symbol of divinity.

[1] It is not impossible that these triple-headed creatures represent triads of zoomorphic deities, just as the three-faced god may also represent a triad.

[2] Cf. Ward, op. cit., chap. x, and figs. 176–87, etc.

[3] Horns were in themselves, of course, a symbol of strength and prowess. Manifold examples of horned deities and demons can be cited from almost every country of the ancient world.

[4] Op. cit., pp. 426–7.

of divinity into Mesopotamia must have come from the mountains of Elam,[1] where he locates the natural habitat of the bison. This line of argument, however, is hardly convincing; for, on the one hand, the bison's horns and bison's forms depicted in Sumerian and early Babylonian art may equally well have been those of the Indian *bos gaurus*, as of the Euro-Asiatic *bos bonasus*; on the other, although the Euro-Asiatic bison is now mainly confined to the mountains of the Caucasus, we know that it once had a wide range over the lowland forests of Europe, and it may therefore have been as familiar in the valley of the Tigris as the gaur evidently was in the valley of the Indus, and still is in many of the submontane tracts of India.[2]

Nāgas (?).

One other half-human, half-animal form that must probably be added to this category is that of the Nāgas. In the faience sealing (Pls. CXVI, 29, and CXVIII, 11) already alluded to, the cobra appears to be distinct from the kneeling suppliant in front of it, but the details are very blurred and it may be that the tail of the cobra is intended to be looped round and joined on to the feet of the suppliant, as it is in certain proto-Elamite monuments.[3] However this may be, it seems probable that the suppliant in this case is meant to be a Nāga.[4] The belief in Nāgas is unknown to the Vedic age, but is prominent in later Indian literature from the time of the Sūtras onwards, and the motif of Nāgas doing homage to a deity is a very favourite one in Indian art.[5]

Animals whose mythical nature is questionable. Unicorns.

The second class of animals, viz. of those whose mythical nature is questionable, comprises the "unicorns" figured on Seals 1–301, 537–41, 543, 544, 546, 548–57, the two-horned beasts figured on Seals 302 and 303, and the pair of officiant animals at the left end of the sealing illustrated in Plate XII, 12. I include the so-called "unicorns" in this category for the reason that there is one clay sealing from Harappā (No. 1202) on which this particular animal, or what appears to be this animal, is depicted with two horns instead of one (Pl. XII, 24), and it is just within the bounds of possibility that the single horn is due merely to the engravers having portrayed the animal in profile, with one horn concealed behind the other; in which case it may have belonged to some actual breed of cattle then familiar in the Indus Valley. Examples of two-horned animals portrayed in this manner could, of course, readily be cited from other countries. If, however, we compare these unicorns with the buffaloes, gaurs, and humped bulls figured on Seals 304 to 340, we see at once that the engravers of Mohenjo-daro (and it was the same at Harappā) made a practice of showing both horns, even when the animal was in profile, and that they could do this on occasion with consummate skill. In face of this we are bound, I think, to conclude that a one-horned creature is intended to be understood on these seals, and, unless there is any truth in the ancient tradition of a one-horned ox in India, we must regard this

[1] Ward also bases his argument on the half-bison forms of Eabani. "These forms," he says, "must have been created in the land where the bison was the familiar animal and therefore in the mountain region and not in the river bottoms"

[2] Gaur or Indian bison are forest-dwelling animals and generally prefer the less accessible hill forests, but are still found in the jungles of the Ganges plain along the foot of the Himālayas, as well as in many submontane forests of Central and Southern India. "Cows and young bulls inhabiting dry open districts are less darkly coloured than those from dense and damp forests." R Lydekker, *The Game Animals of India*, p. 58.

[3] Cf. *Mém. Dél. Perse*, vol. xii, fig. 296. For a snake protecting a suppliant, see *ibid*, figs. 300 and 319.

[4] Another tiny faience figure recently found by Mr Mackay at Mohenjo-daro (Pl XIII, 15 and 16) looks at first sight remarkably like a Nāga, but what appears in the photograph to be a cobra-hood is in reality nothing more than a long plait of hair falling down the back, and a pair of ram's horns, one on either side of the head.

[5] For the close association of serpents with *linga* temples in the South of India, cf. Oppert, op. cit., p. 138; Monier Williams, op cit, pp 79–80.

creature as fabulous.[1] The unicorn was, of course, a familiar creature of Indian folk stories, and Vishnu's title of *Ekaśringa* may conceivably embody some memory of this prehistoric beast, though it is just as likely that it owed its origin to the rhinoceros, from which also the unicorn we are discussing may ultimately have been derived. Whatever its origin, however, it seems clear from the large number of amulet seals on which this creature is portrayed that, whether regarded as an object of cult worship or as a magic talisman, it was more popular than any other animal among the Indus peoples. Two features connected with it that deserve notice are, first, that it frequently has a sort of saddle or covering over its withers, and sometimes also (e.g. Seals 4, 36, 41, 44, etc.) has its neck adorned with a series of rings which call to mind the armlets of the three-faced god and the series of torques around the neck of the Mother Goddess (Pl. XII, 8 and 9); secondly, that it is almost invariably[2] accompanied by a curious object placed beneath its head, which is not found with any other animal except the one figured in Pl. XII, 24, which appears to be merely a variant of the unicorn type. This object, which consists of two vessels fixed on to a short central staff, I take to have been an incense-burner, intended to be carried in the hands, since there is nothing to suggest that it was fixed into the ground. That the lower bowl contained fire is, I think, indicated on some of the seals (e.g. Pl. XIII, 22) by what seem to be small flames rising above the sides of the vessel.[3] In the upper vessel, which appears to be of metal open-work, possibly revolving on the stem, would be placed the incense consisting of fragrant wood, dried flowers, seeds, or gum resins, which would thus burn more slowly than if thrown direct on the fire. If I am right in supposing that the unicorn may have been associated in some way with the cult of the pipal tree goddess (as suggested by Seal 387), the burning of incense in its ritual worship would have been particularly appropriate, but, whether this tentative suggestion proves correct or not, we must infer, I think, that incense played a prominent part in the cult of the one-horned ox. That the incense-burner itself became an object of worship or veneration seems clear from seals like those figured in Plates XII, 23, and XIII, 19 and 20, in which it is engraved without the unicorn and on an immense scale in comparison with the man who stands by the side of it, and from the sealings 5 and 8 on Pl. CXVI, where it is being carried in procession along with a bull idol and other objects in a manner that recalls the sacred Nome standards of Egypt.[4]

Incense-burners.

[1] In the ancient world the unicorn (μονόκερως) was traditionally believed to be an Indian animal. According to Pliny, the oryx, the Indian ass, and an Indian ox were all one-horned (*NH.* viii, 30; xi, 106) F. Schrader (*Sitzungsberichte d. kgl. preuss Akad. zu Berlin*, 1892, pp. 573–81 and pl v) "traces the idea of the one-horned ox to the sculptures of Persepolis and other places which Ctesias (the first Greek writer to mention the Indian unicorn) would probably have seen, in which the ox represented in silhouette has apparently only one horn" (*Enc. Brit* xxviii, p. 581). But it is now obvious that the idea of a one-horned ox is much older than Achaemenian times For unicorns alleged to have been seen in modern times, see A. T. Wilson, *The Persian Gulf*, p. 290, footnote 2.

[2] The only exception is Seal 167, where the unicorn faces left instead of right What the object is, in this case, below the head of the animal, is uncertain. It may be the third letter of the inscription, of which two letters are engraved above the animal.

[3] It may be that the two vessels served simultaneously as lamp and incense-burner Lamps and lamp-waving have always played an important part in Hindu ritual, the special object of the waving being to protect worshippers from the powers of evil in the darkness. Similarly, among the Jains, the waving of *ārati* lamps is an indispensable item at evening services. It is noteworthy that the *ārati* lamp of the Jains consists of two tiers of lights, one in the upper and five in the lower; the *maṅgala* lamp also consists of two parts, a cup in which *ghī* and a saucer in which camphor is burnt, the latter being in the nature of incense. Cf. M. Stevenson, *ERE* xii, p. 801.

[4] Ancient Indian standards were often surmounted with emblems and images of sacred animals, such as the ape, the bull, the boar, the elephant, and the peacock. Cf. Hopkins, op. cit., p. 539, and *JAOS.* xiii, 244. The worship of these incense-burners, which are cult implements of importance and stand probably for the god himself, must be

Of the other animals figured on Seals 302 and 303, all that need be said is that they cannot be identified with any known species at present existing, though this is no proof that they are merely creatures of the fancy. The two beasts on the Harappā seal (Pl. XII, 12) are more interesting, as they belong to a class of officiant animal genii, which have long been familiar in the Ægean area and to which most instructive parallels have recently been found by Mr. Woolley at Ur in Mesopotamia. On the Mohenjo-daro seal the two genii appear to be lions or tigers (probably the latter), but, whether they be real or imaginary creatures, there can be little doubt that they are meant to be taking part in some ritual ceremony, just like the pair of genii on the well-known Vaphio gem, who are watering young palms with libation ewers,[1] or those on the plaques of shell inlay from the King's grave at Ur, one of which, a dog, is carrying some sacrificial heads on an altar, while a lion holds two sacrificial vessels, and another dog is playing on a harp.[2] That the conception of these animal genii arose independently in Greece, Mesopotamia, and India is hardly conceivable, but whether it originated in the East or the West has yet to be determined.

Beasts as officiant genii.

Living animals represented on the seals.

The third class of real animals comprises the water buffalo (*Bos bubalus*), the gaur or Indian bison (*Bos gaurus*), the Indian humped bull or zebu (*Bos indicus*), the Indian rhinoceros (*Rhinoceros unicornis*), a short-horned humpless bull, the tiger (*Felis tigris*), and the Indian elephant (*Elephas maximus*). All these are depicted—generally with great spirit and fidelity—on the seals, and we may take it for granted that in the Chalcolithic Age they were all familiar beasts in Sind and the Panjāb. Of the seven animals in question three are invariably shown on the seals feeding from what appear to be food troughs, viz. the Indian bison (Seals 310–26), the rhinoceros (Seals 341–7), and the tiger (Seals 350–1); two, the elephant (Seal 369) and the buffalo (Seals 304–6), are sometimes feeding from these troughs, sometimes not; while the zebu (Seals 328–40) and the short-horned humpless bull (Seals 487 and 542) appear without them, though in the case of the latter there is a small object on the ground beneath its head, which is not clear enough to be distinguished. Is any significance to be attached to the presence of these troughs, or are they merely fortuitous? Clearly they bear no relation to domestication; for the two animals which alone we may safely assume to have been domesticated, namely the humped and short-horned humpless oxen, are without them; and, on the other hand, the tiger, rhinoceros, and bison, which have never been domesticated but might have been kept in captivity, are provided with them, while the buffalo and elephant, which might be either tame or wild, are sometimes provided with them, sometimes not. My own surmise is that the troughs were meant to symbolize food offerings, and that their presence implies that the animals to which these offerings were made, whether in captivity or in the wild, were objects of worship, just as the incense-burners on the unicorn seals also imply that the unicorns were worshipped, the difference between them being that, whereas actual food could be set before these living animals, incense was perhaps regarded as more appropriate for the imaginary unicorn. In offering

distinguished from the worship of the personified things of daily life, though both are embraced in "chrematheism". Cf. Hopkins, op. cit., p. 135, Nilsson, op. cit., p. 207. The substitution of a symbol, such as this incense-burner, for the deity, is well illustrated on the Chaldean *Kudurrus* (boundary stones), where the gods or their symbols figure indifferently.

[1] Cf. Tsountas and Manatt, *The Mycenæan Age*, p. 301, fig. 157. With these may be compared the genii on the handle of a bronze hydria from Kurion in Cyprus. Cf. Arthur Evans, *The Palace of Minos*, vol. ii, p. 505, fig. 309, and p. 653, fig. 418, and *Myc. Tree and Pillar Cults*, p. 3, and figs. 1, 12, 13, and 14. For later examples from Assyria and Greece, cf. Layard, *Monuments of Nineveh*, i, pl. xxx, and A. B. Cook in *Journ. Hell. Stud.* xiv, 82 ff. Dr. Cook holds that the Minoan animal genii originated as human worshippers masquerading as animals in rites or ritual dances.

[2] For illustrations of these plaques cf. Woolley, *The Sumerians*, p. 44, pl. xi.

this explanation, I naturally exclude from my reckoning those seals (e.g. Nos. 353 and 355) on which a tiger is represented standing beneath a tree in the branches of which a man is ensconced. Such seals may have been used as protective amulets against tigers or other jungle animals, but, whatever their value, they cannot be classed with the great majority of seals on which the animal is represented alone.

Figurines and engravings of other animals. Besides the above, a variety of other animals are found represented at Mohenjo-daro and Harappā, namely the ram, pig, dog, monkey, bear, hare, squirrel, parrot, and other birds too roughly portrayed to admit of identification. None of these, however, occur on the seals. They are found either engraved on the copper tablets referred to above, or else take the form of terra-cotta, faience, copper, or bronze figurines in the round. Some of these figurines, especially the rough terra-cotta ones, were doubtless nothing more than children's toys or rattles, but that others had a sacred character or served as talismans or amulets can hardly be doubted. **Their talismanic or sacred character.** Among the latter must probably be classed the sheep and rams, sometimes exquisitely modelled in faience (Pl. XCVII, 1–3 and 5), the little squirrels of the same material (e.g. Pl. XCVI, 7), and the mastiff (Pl. XCVI, 17). Still less open to question is it that most of the copper tablets and seals had a religious or magical value. No other hypothesis accounts for the numerous specimens of these animal seals found distributed over almost every building on the site as compared with the very small number of clay sealings [1]; nor does any other hypothesis account for the religious character of many of the devices engraved on them. To say this is not to beg the question of their character; for, if we consider the other deities on these seals and compare with them the horned creatures, half-human, half-bovine, the hybrid composite animals with human faces, the other strange and mythical beasts, and the bulls born aloft in ceremonial procession, we are inevitably forced to the conclusion that the majority, if not all, of the animals portrayed on these seals, whether mythical or real, had some sacred or magical import in the eye of their owners; though, when we come to ask ourselves what particular degree of sanctity attached to them, we have to confess that we are on very uncertain ground. Were they objects of actual cult worship or were they merely reverenced and protected? Between reverence and worship there is a wide difference. Because an animal was looked upon as sacrosanct or lucky, it does not therefore follow that prayers were said or offerings made to it. Fishes, for example, are to-day venerated and fed in many sacred tanks and rivers in India; they are regarded as the home of departed spirits, and it would be sacrilege to harm them. That does not mean, however, that they are recipients of divine honours. The little squirrels, again, which were fashioned into such attractive charms at Mohenjo-daro, are still respected for their house-haunting instincts,[2] and spared even by the menial tribes who eat almost every other animal. But, so far as I am aware, they are not worshipped. We must guard, therefore, against assuming that all the animals which served as charms or talismans at Mohenjo-daro were necessarily objects of cult. **Animal cults.** Nevertheless, it is safe, I believe, to infer that the images of composite animals with human faces were intended for worship, and there is hardly room for doubt that, like the Three-faced god and Tree-goddesses on the seals, the other major animals were also deified, namely the unicorn, tiger, elephant, rhinoceros, bison, buffalo, bull (both humped and humpless), and the ghariyāl. Among a people given to theriolatry these animals (excluding, of course, the mythical unicorn) would naturally—in virtue of their excessive strength, courage, or virility—be the foremost to

[1] On sites of the historic period, when seals were used mainly for commercial purposes, the number of sealings found is many times more than that of the seals.

[2] Cf. Crooke, op. cit., p. 370. The weasel, it may be recalled, was "sacred" in ancient Thebes. Ælian says that it was "worshipped", Clemens that it was merely "honoured". Farnell, op. cit., p. 77.

be deified, and some of them, moreover, go to the making up of the composite human-faced creatures referred to above, which we may surmise were syncretic forms in which several zoomorphic cults were combined into one. Among them the tiger was and still is a vehicle of the Mother goddess, who in one of her cruel aspects takes the shape of a tigress.[1] Among the Gonds of Berār she is known as Vāghaī Devi, while among the Bhīls there is a corresponding deity Vāghaīka Kunwar (Tiger Prince), to whom fruit, wine, and sheep are offered.[2] Among the Kandhs the Earth Mother assumes the form of an elephant, instead of a tigress, and it is not long since human victims were sacrificed to her in this form. In Āryan India, however, the elephant appears as Airāvata, the vehicle of Indra, but it is as Gaṇeśa or Gaṇapati—the God of Wisdom and Enterprise and the Embodiment of Good Luck—that he is most widely worshipped. Gaṇeśa is said to be the eldest son of Śiva by Pārvatī or of Pārvatī[3] alone, and his cult, which, though prevalent in the north, is most deeply rooted in the south of India, was undoubtedly of non-Āryan origin.[4]

Tiger and elephant.

Rhinoceros and bison. The rhinoceros and bison have now disappeared from most parts of the country, and little evidence exists of their former sanctity; it is noteworthy, however, that the Lhota Nāgas still bury a piece of rhinoceros bone near their fields to make the crops grow.[5]

Buffalo. The buffalo is the *vāhana* of Yama, the God of death, and associated with him in worship, for which reason pious Hindus will not use him for ploughing or carting.[6] He is also a dark demon of the water; and under the name of *Bhainśāsura* is deified as a corn spirit, to be propitiated (for he is essentially a malignant type of deity) when the grain is coming into ear.

Bull. The bull, both humped and humpless, is closely associated with Śiva, and daily worshipped by his followers, and once a year—on the occasion of its own festival—by Hindus of all sects. The liberation of a bull (*vrishotsarga*) dedicated to Śiva and stamped with his trident, is an act of the highest merit, believed to provide a deceased person with a vehicle to the next world.[7]

In prehistoric times the worship of the bull (with which must be included the wild bison, buffalo, and domesticated ox) was widely disseminated throughout the Middle and Nearer East, where he appeared sometimes as a beneficent guardian of the homestead, sometimes as a malevolent storm demon.[8] That this cult was very prevalent in Chalcolithic times throughout Sind, the Panjāb, and Balūchistān, is proved by the large numbers of terra-cotta bulls found at Mohenjo-daro and Harappā and on contemporary sites in Northern and Southern Balūchistān, as well as by the frequent delineation of the bull on pottery. Whether at this time the bull was specially associated with the Three-faced God, whom I identify as the prototype of Śiva, there is at present no evidence to show, but it is quite likely that its cult was then independent and only absorbed by Śaivism at some later period.

[1] Crooke, op. cit., p. 354.

[2] Cf. Lyall, *Berār Gaz.*, 191 sq.; Luard, *Ethno. Survey*, Art. "Bhil", 29; Crooke, op. cit., pp. 354–8, where much information is given regarding the superstitions that have gathered round the tiger.

[3] Sometimes said to be son of Pārvatī alone. Cf. Crooke, op. cit., p. 98.

[4] By the Ganapatyas, Gaṇeśa and not Śiva is regarded as the great First Cause, who alone exists eternally, and the worshippers of Uchchhiṣṭa Gaṇapati regard Devī as the *Śakti* of Gaṇeśa, not of Śiva, and lay great stress upon promiscuous intercourse of the sexes in their ritual. Cf. G. A. Grierson, *ERE.* vi, pp. 175–6.

[5] Crooke, op. cit., p. 257; Mills, *Lhota Nagas*, p. 169.

[6] Cf. Crooke, p. 366. As the death demon, the buffalo was slain by Devī, whence her title of *Mahishamardinī*, and whence also perhaps the common sacrifice of this animal to the Mother Goddess, often in place of the human beings formerly offered.

[7] Monier Williams, op. cit., p. 319.

[8] A. H. Sayce, *ERE.* ii, 888, s.v. "Bull".

The crocodile is the vehicle of the Ganges, as the tortoise is of the Jumna, and is associated with other rivers. Like the fish, too, it is protected in sacred tanks[1] and, in certain localities, worshipped. Thus, the Sonjharas or "gold washers" of the Central Provinces catch a crocodile alive, worship it, and when the rite is over return it to the river; while certain wild tribes of Baroda worship a rough wooden image of the brute supported on two posts. Generally it is the *magar* or snub-nosed species, far more to be dreaded than the long-nosed species (*ghariyāl*), that is worshipped, and it is from the former that *Magardeo*, the "Crocodile God", takes his name; both species, however, are venerated and deified.[2] **Crocodile.**

The foregoing facts respecting the present-day worship of these animals afford, of course, no proof that they were similarly worshipped five thousand years ago. In a country, however, which is as conservative as India, particularly in regard to its religious cults, these facts are not without real significance; and when we find, as we do, that most of the elements which make up this prehistoric religion—so far as we can at present analyse them—are perpetuated in later Hinduism, we are justified in inferring that much of the zoolatry which characterizes Hinduism and which is demonstrably non-Āryan, is also derived from the prehistoric age. **Significance of foregoing facts.**

In this connection there is an interesting passage in Ibn Batūta's *Travels* that deserves mention. Describing his journey through Sind in the year A.D. 1334, he says: "One day I rode with 'Alāu-l-Mulk to a spacious site called Tārnā,[3] seven miles (from Lahārī), where I saw innumerable stones in the form of human beings and animals. Many of them were defaced and their features obliterated, so that there remained but the shape of a head or foot or other member. Among the stones, too, were some in the form of grains of wheat, of the chick-pea, the bean, and the lentil. There, too, were traces of a town wall, and of the courtyards of houses. Afterwards we saw the remains of a house in which was a chamber of hewn stone. In the middle of this was a platform of hewn stone, like a single block, and on it the figure of a man, except that its head was elongated, and its mouth on the side of the face, and the hands were behind the back like a captive's." According to Ibn Baṭūta's companion, the inhabitants of this city had been so depraved that they had been turned into stone, and this was said to have happened a thousand years or more before Ibn Batūta's time. Clearly the remains must have been very exceptional, and unlike anything that Ibn Batūta saw in other places. It seems not unlikely, therefore, that Tārnā was a prehistoric site of the same Chalcolithic Period as Mohenjo-daro and Harappā, and this probability is strengthened by the discovery on the latter site of an immense but fragmentary stone tortoise. **Tārnā possibly a prehistoric site.**

To revert to other animals represented at Mohenjo-daro, the cult of the Monkey God is more widespread and deeply rooted in India than in any other country, and is participated in by various non-Āryan tribes.[4] As Hanumān he is figured in half-human, half-animal form, and his idols commonly guard the entrances to forts, towns, and villages. It is curious, therefore, that he finds no place among the animals depicted on the seals, whose cults seem to have been the most popular at Mohenjo-daro. With the dog, pig, goat, and bear it is different, for although these animals are regarded as more or less "sacred" or taboo, **Monkey God.** **Dog, pig, goat, and bear.**

[1] E.g., at Magar Talāo, near Karāchi.

[2] Cf. Crooke, op. cit., pp. 376–7.

[3] Cf. M. R. Haig in *JRAS.* 1887, pp. 398 ff. The writer is inclined to identify Tārnā with Morā-Mārī, 8 miles N.E. of Lahārī and 5 miles from the hills, where stone could have been quarried. Lahārī, also written as Lāharī, Lahari, and Lahori, and known later as "Larrybunder", is 28 miles S.E. of Karāchi, and 12 miles in a direct line from the sea-coast. Cf. M. R. Haig, *The Indus Delta Country*, map iii, p. 30.

[4] E.g., "The Suiri of Bengal and the Bhuiyas of Keunjhar." Crooke, op. cit., p. 175.

they are nowadays worshipped either not at all or only by a very few. Thus, the dog is respected by hunting and pastoral tribes, and is even deified by the dog sect of the Bhīls [1]; but in the eyes of Hindus generally, and of Musulmans as well, it is an impure animal.[2] The domesticated pig, too, is impure: though in a wild state the pig is regarded as the representative of the Goddess Gaurī, and its flesh is sacramentally eaten by Rājputs.[3] Dishai Devī, protectress of the sheep-pen, may, it has been suggested, be a deified sheep, but, granting that this is so, the cult of the sheep does not now extend beyond isolated groups of shepherds.[4] The bear and the hare are both sacred and possessed of magical virtues, but it is doubtful if either of these animals is an object of actual worship.[5]

Theriomorphism and anthropomorphism.

Why certain of these animals came to be regarded as sacred or taboo, and why others were deified—whether in one case it may have been due to some uncanny trait in the appearance or habits of the animal itself, in another to its association with man, or in another to a totemistic origin—these are questions which need not concern us here, and on which in any case it would perhaps be idle to speculate. What does concern us and what is important for the subsequent history of Indian religion, is to observe that at this remote age anthropomorphism is going hand in hand with theriomorphism, that the Nāgas seem to have assumed the quasi-human form that has distinguished them throughout the ages, bulls appear with human heads and bodies, bulls' horns have become a symbol of divinity, and syncretic chimerical creatures are also provided with human faces. This does not necessarily mean that theriomorphism preceded anthropomorphism in India. It may have done so, but there is no proof of it. The two may equally well have developed side by side; indeed, the fact that even to-day, after thousands of years of evolution, animals like the Nandī bull are still being worshipped in their theriomorphic form, militates against the view that theriomorphism naturally or necessarily led on to anthropomorphism.[6] What these therianthropic creatures do signify is that some animals, like some trees, are already conceived of as personal deities and endowed, like human beings, with distinctive attributes and functions; that is to say, that they are not merely reverenced in the sense that animals which are "sacred" or taboo are reverenced. The animals which thus appear to be held sacred are those which are remarkable for their strength, courage, virility, or swiftness; that is to say, for their *mana*. Side by side with these, however, there are other animals, which are not found on the seals and which are neither themselves anthropomorphized in any way, nor yet incorporated in any of the composite therianthropic deities. These animals, such as the dog, pig, hare, squirrel, etc., may or may not have been objects of worship. On that point we cannot be sure, but we may safely infer that, if they were not worshipped, they were regarded as sacred or taboo or possessed of magical powers of one kind or another, and for this reason were used as amulets. If these inferences are correct—and there is hardly room for disputing them—theriolatry was not, in its outward manifestations at least, very different five thousand years ago from what it is to-day. What esoteric or other ideas may have lain at the back of it is at present hidden

[1] This sect makes an image of the dog in flour, cooks it, worships it, and eats it, possibly as a form of totemistic communal sacrifice. Crooke, op. cit., p. 359. Luard, *Ethno. Survey*, Art. "Bhil", p. 69.

[2] The idea of impurity in the dog and domesticated pig may have originated in their being "sacred" animals, dangerous to touch.

[3] Crooke, op. cit., p. 367.

[4] Crooke, *ibid.*, p. 131. Ram's horns, hung on temples or houses, have a protective value.

[5] The bear scares away disease, and its hair is worn round the neck by sickly children; the hare is used for medicine, especially in the cure of fits. Crooke, op. cit., pp. 363, 370, and 371.

[6] Cf. Farnell, op. cit., p. 69.

from us, but we should do well not to take it for granted that it is only the superficial and the outward forms that have come down from this remote past.

WATER WORSHIP

Reverence paid to water.

Of the sanctity of water in the abstract, no tangible evidence has yet been found, but that water was held in great reverence and that it played a highly important part in the daily lives and religion of the citizens of Mohenjo-daro is demonstrated by the elaborate bathing establishment described in Chapter III, as well as by the universal arrangements made in private houses for the supply of water and for baths. Indeed, it is safe, I think, to affirm that in no city of antiquity was so much attention paid to this matter of bathing as in Mohenjo-daro; and we can hardly believe that the practice would have been so ubiquitous and firmly rooted there, had it not been regarded in the light of a religious duty. That such emphasis should have been laid on bathing—even at this remote age—will not come as a surprise to anyone familiar with the importance that from time immemorial the Indian has attached to ceremonial ablutions in sacred tanks, pools, and rivers. Every pious Hindu starts the day with bathing, preferably in a running stream, or failing that in a pool or tank or even in a private bath, since it is only by such bathing that the sins of the day can be washed away, while to bathe in a holy pool like that of Pushkara is to be absolved of every sin committed since birth. But though water is holy, possessed, that is, of *mana* in the eyes of Hindus and able to cleanse from material and spiritual pollution, it does not follow that it is worshipped as a personal deity. On the contrary, the sanctity that attaches to it by reason of its cleansing powers needs to be distinguished from the deification and worship of rivers. The Ganges and the Jumna are both personified and on occasion worshipped; and the *Daryāpanthis*, whose most sacred spot is Uderolāl in Sind, make river worship the basis of their strange cult.[1] Such worship may have come down from prehistoric times—that is quite a possibility, nay, even a probability—but, in the absence of definite proof, it would certainly be rash to assume that it has done so; for the deification of rivers is a prominent feature of Vedic religion, and it may be that it was one of the elements contributed to later Hinduism by the Āryan, not by the pre-Āryan population of India. On the other hand, the worship of rivers is so world-wide that it may well have originated independently among the pre-Āryans as well as among the Āryans; and there is certainly nothing in early literature to suggest that the universal reverence which Indians pay to wells, tanks, and lakes, and to their indwelling spirits is traceable to a Vedic source.

Deification of rivers.

Nāgas and water-spirits.

Such spirits of the water may be represented by the serpent Nāgas, if they are, indeed, Nāgas, to which allusion has already been made, but here again we are on very debatable ground. In art and legend the Nāgas are intimately associated with water—of that there is no doubt—and are frequently said to have their homes in the depths of the ocean or at the bottom of lakes or rivers.[2] But snake-worship is many-sided, and the deification of Nāgas as water-spirits is but one aspect of it. In the first instance it was probably their mysterious venomous nature and the terror they inspired that caused snakes to be venerated;

[1] Cf. *Gazetteer of the Province of Sind*, p. 165. The cult of the Daryāpanthis has been appropriated also by Musulmāns, who in Sind associate it with their patron saints, Sheikh Tāhir at Uderolāl and Khwāja Khizr at Sukkur. On the subject of water-worship generally, see M. Ninck, *Die Bedeutung des Wassers im Kult und Leben der Alten* (Phil. Suppl. xiv, 2, 1921), and F. Pfuhr in Pauly-Wissowa, *Real-Ency.* xi, 2178 f.

[2] In the legends of the Mahābhārata the connection of the Nāgas with the waters is especially prominent. Cf. Vogel, *Indian Serpent Lore*, p. 94.

then from their habit of living in holes in the ground they acquired a Chthonic character, became the representatives of the dead, and were believed to dwell in the regions under the earth[1]; while the fact that they frequented houses led popular imagination to connect them in particular with the cult of the *pitri* or ancestors.[2] In another and perhaps derivative aspect they were also associated as celestials with the storm clouds and became the givers of beneficent rain or destructive hail.[3] Thus, there are several distinct conceptions (and others might be added), any one of which the Nāgas may have embodied, but which one in particular cannot be determined without further evidence.

Influence of Sumer and Western Asia

Eabani.

We have seen that certain figures at Mohenjo-daro and Harappā (e.g. Pl. XIII, 17) resemble the Sumerian Eabani or Enkidu, the half-human, half-bovine Satyr, who became the companion of Gilgamesh; and Gilgamesh himself may be represented by the leaf-clad hunter on a copper tablet with a bow in his hand and horns on his head (Pl. CXVII, 16). That a close connection exists between these figures and the Mesopotamian heroes is hardly likely to be disputed. The resemblance is too marked to be the result of chance or of independent evolution, nor can it be explained on the hypothesis that they were sprung from a common prototype foreign to both countries. Either the Indus Valley type must have been borrowed from the Mesopotamian or the Mesopotamian from the Indian, and seeing how intimately the Gilgamesh-Eabani legend is bound up with Sumer, it is reasonable to conclude that the borrowing was done by India. At the same time, the possibility must not be overlooked that the types of these horned or half-bovine figures may have been created in the Indus Valley and subsequently adapted to Sumerian legend.

Summary and conclusions.

We have seen, too, that the use of bull's or bison's horns as a symbol of divinity and the officiant beasts on one of the Harappā seals are indicative of religious contact between the Indus Valley and Western Asia, but apart from these few elements[4] and the sacral trefoil patterning on the robe of the image illustrated in Plate XCVIII, all the material of a religious nature recovered at Mohenjo-daro and Harappā appears to be characteristically Indian. Although relatively meagre in proportion to the extent and importance of the sites, this material is sufficient at any rate to make it clear that iconic and aniconic cults existed side by side, and were just as compatible five thousand years ago as they are in the Hinduism of to-day. It exhibits to our eyes, on the one hand, the worship of the Mother Goddess, who still occupies a foremost place among the teeming village population of India; and side by side with her a god, whom we have seen good reason to recognize as the ancestor of the historic Siva, the principal male deity of the Hindu pantheon. On the other hand, it shows us the worship of animals and trees and inanimate stones or other objects in much the same form as it meets us in historic times. Animals appear deified or venerated sometimes in their natural, at other times in semi-human, at others in syncretic and fabulous shape. Trees, too, are worshipped in their natural state, but their indwelling spirits are already completely anthropomorphized. The *linga* and *yonī* both have their places in the religious scheme, as they

[1] These regions are known as *Nāgaloka*, and the capital of the Nāgas as *Bhogavatī*.

[2] Crooke, p. 388.

[3] That snake-worship was in the main pre-Āryan there can be little doubt, though the fact that it finds no mention in the Rigveda must not be taken as proof that it was unknown to the Āryans. Cf. Vogel, op. cit., p. 6.

[4] I do not include Śaktism here, for the reason that, as stated above, there is no direct evidence of it at Mohenjo-daro, though there is a strong presumption that it could not have been evolved independently in the Near and Middle East.

have in Śaivism, and along with these emblems are other stones, apparently of a bætylic nature. Chrematheism is exemplified in the worship of the sacred "incense-burners"; amulets and charms are common, attesting the existence of that demonophobia with which Hinduism has always been incurably afflicted. And there is evidence that *yoga* was already playing its part as a religious practice.

Yet, precious as this material is as affording us our first insight into the beginnings of a great religion, let it be confessed that it is no more than the dry bones of the once living organism—bones so few and fragmentary that we cannot hope to reconstruct from them even a skeletal outline of the whole, let alone to clothe it in flesh or delineate its features. But, because we cannot do this, we must not, therefore, imagine that it had no features worth delineating. There is enough in the fragments we have recovered to demonstrate that, so far as it was capable of expression in outward concrete forms, this religion of the Indus people was the lineal progenitor of Hinduism. But these fragments give us a glimpse only of the popular, devotional, and superstitious side of this religion. Of its other and more rational side; of esoteric ideas and philosophic concepts, that may have been as fundamental to it as to later Hinduism—they have nothing to tell us. That is the misfortune of our possessing no documentary material that can be deciphered. Yet that there must have been such another side to this religion can hardly be doubted, unless we are to believe that a people capable of evolving this highly complex and advanced civilization were yet incapable of progressing beyond the primitive animistic beliefs with which the pre-Āryans have hitherto been credited; or that, while they were superior to the Vedic Āryans in all that concerned material culture, they were yet hopelessly behind them in the ordinary processes of abstract thought. But there is another point of view from which to look at this problem. Many of the basic features of Hinduism are not traceable to an Indo-Āryan source at all. They come into view, not in the earliest Vedic literature, which represents the more or less pure Indo-Āryan tradition, but either in the later Vedas or in the still later Brāhmaṇas, Upanishads, and Epics, when the Vedic Āryans had long since amalgamated with the older races and absorbed some measure of their culture and teachings.[1] Chief among such features are the cults of Śiva and the Mother Goddess, of Krishna and of the Nāgas and Yakṣas, the worship of animals and trees and stones, phallism, *yoga*, *śaktism*, and the doctrines of *samsāra* (metempsychosis) and *bhakti* (devotion to a personal god). Whence these various elements were derived and when they found their way into the fabric of the national religion has never yet been satisfactorily explained. Krishnaism is admittedly of late date, and does not come into the question. For the rest the orthodox view has been that they represent a popular form of religion evolved by the Indo-Āryans themselves—a parallel growth, as it were, to the Vedic religion, but one which being of the masses, not of the elect, found no place in the sacred books of the Vedas.[2] A few of these features, it has been conceded, may have been taken over from the pre-Āryans, but only such primitive ones as the worship of trees and animals and stones, which are common to the majority of uncivilized races. Those who have championed this view (and they include the chief writers on the subject) knew nothing, of course, of the great pre-Āryan civilization that has now been revealed. They pictured the pre-Āryans as little more than untutored savages, whom it would have been

[1] Cf. A. K. Coomaraswamy's excellent brochure on the "Yakṣas", pp. 2 and 3, *Smithsonian Miscellaneous Collections*, vol. lxxx, No. 6; and R. Chanda, *Indo-Aryan Races*, pp. 99–101, 106–8, 249–52, where he shows that primitive Śaivism, Vaishnavism, Sānkhya, and Yoga are the four corner-stones of modern Hinduism, and that there was a time when the orthodox exponents of Vedism recognized that these systems were non-Vedic

[2] See, for example, Barth, op. cit., p. xv.

grotesque to credit with any reasoned scheme of religion or philosophy.[1] Now that our knowledge of them has been revolutionized and we are constrained to recognize them as no less highly civilized—in some respects, indeed, more highly civilized—than the contemporary Sumerians or Egyptians, it behoves us to redraw the picture afresh and revise existing misconceptions regarding their religion as well as their material culture. Of the elements enumerated above, but excluding the cult of Krishna, we have found at Mohenjo-daro evidence of practically every one that is capable of formative expression, viz. of the cults of Śiva and the Mother Goddess, of the Nāgas and Tree deities, of animal, tree, and stone worship, of phallism and of the practice of *yoga*. We have seen, moreover, that although there are no visible traces of *śaktism* at Mohenjo-daro, there are strong reasons for believing that it existed on Indian soil from a very early period, as it existed also in Western Asia and round the shores of the Mediterranean. In view of these facts, is it not reasonable to presume that the peoples who contributed so much to the cultural and material side of Hinduism, contributed also some of the essential metaphysical and theological ideas so intimately associated with it? In the absence of decipherable documents, we can, of course, but argue on the probabilities of the case, but surely this presumption is more natural than to postulate the existence among the Indo-Āryans of a body of religious beliefs and doctrines of which their own voluminous literature knows nothing and which are largely alien to Vedic thought.

A mistake, as it seems to me, that has too often been made has been to take the modern jungle tribes as the lineal representatives of the pre-Āryans and to assume that they have perpetuated all that is worth perpetuating of the cultural and religious traditions of the latter. India has always had her jungle tribes. She had them five thousand years ago, as she has them to-day. But side by side with them she also had her cultured classes of the cities, and the gulf between the two was probably as great then as it is now. As to the primitive beliefs of these jungle folk, they may, it is true, be reckoned as part and parcel of Hinduism, which has ever been ready to admit within its fold any and every kind of teaching, creed, or cult, from the most transcendental doctrines of theology to the most degraded types of fetishism. This has been a characteristic of Hinduism as far back as its history can be traced, and it was doubtless a characteristic of the still earlier Indus religion which preceded it, only that in that remote age there was presumably less diversity of belief than now. To this limited extent, then, we are justified in believing that the non-Āryan jungle tribes of to-day do, in fact, preserve for us some of the cruder and more elemental features of the pre-Āryan religion. But to assume, as so many have done, that such features represent the sum total of that religion is as irrational as to suppose that the rude grass and mud hovels of these same jungle tribes are representative of the massive edifices of Mohenjo-daro and Harappā.

[1] Cf. Monier Williams, op. cit., pp. 57–8; Hopkins, op. cit., p. 524.

Chapter VI

DISPOSAL OF THE DEAD

Obscurity of available evidence.

HOW did the Indus people dispose of their dead? A complete and decided answer to this question cannot yet be given. At Mohenjo-daro the evidence is as yet too meagre and in some respects obscure. At Harappā it is more abundant, but most of it relates to the latest period of occupation, when Mohenjo-daro had probably ceased to exist, and when the population of Harappā itself may have already undergone great racial changes. Some day, perhaps, we may succeed in finding a cemetery at Mohenjo-daro like the one already found at Harappā, but dating from the time when the Indus civilization was at its zenith. This, however, is quite problematical. It may be that no such cemetery exists or ever did exist. The common practice in those days may have been to burn the dead and, after cremation, to dispose of the few remaining bones as they are sometimes disposed of in the Panjāb to-day—by grinding them to powder or in some other way that would leave no trace of them behind. In that case any evidence we might get could hardly fail to be of an intangible kind. My meaning as to this will become clearer later on when I have explained the nature of the evidence we already possess at Mohenjo-daro and Harappā. This evidence may conveniently be discussed under the following heads, namely: 1. Complete burials. 2. Fractional burials. 3. Post-cremation burials.

1. Complete Burials

Complete burials at Mohenjo-daro.

In this category we must include twenty-one skeletons found at Mohenjo-daro, though it is doubtful if they can be regarded as examples of orthodox burial duly carried out in accordance with the customs in vogue at the time. They comprise the following :— (*a*) fourteen skeletons in Room 74 of House V, HR Area, Section B—thirteen of adult males and females and one of a child. With them were found a variety of personal ornaments, some of which still encircled the bones, viz. shell and copper bracelets, copper finger rings, copper and faience beads and seal No. 80. In the opinion of the excavator, Mr. Hargreaves, the varied attitudes of the skeletons point to simultaneous death. One of the bodies was lying partly over the remains of the south wall of the chamber, thus proving that death must have taken place at some time after the wall in question had fallen to ruin, but how long after is problematical.[1] (*b*) Group of six skeletons, including one of a child, in Lane 4 between Houses XVIII and XXXIII, VS Area. Over two of the skeletons were lying the vertebrae of an animal. The only other objects found with them were a shell ball and three pieces of shell-inlay.[2] (*c*) One skeleton in Deadman Lane, HR Area, Section A.[3]

[1] See pp. 184–6 *infra* and Pls. XLIII, *a*, and XLVI, *a* and *b*.

[2] See pp. 222–3 *infra*.

[3] See p. 179 *infra* and Pl. XLII, *c* and *d*.

Bodies buried within few hours after death, probably beneath floors of houses of Late Period.

Seeing that seven of the above skeletons were found in public streets, and that the others were lying in a ruined chamber, that none of them had its limbs composed in an orderly fashion, and that with them were none of the offerings or grave-furniture usually provided for the dead, the excavators at first concluded that the dead must have been the victims of some unwonted tragedy—plague, famine, or sudden death, and that the corpses were left



Fig. 2.—A typical burial in the second stratum of Cemetery at Harappā.

to lie where they had perished. They concluded, too, that at the time this happened Mohenjo-daro was already ruined and deserted, and that the dead had probably been the members of some wandering jungle tribe. These conclusions cannot be made to square with the facts. For, in the first place, it is evident that the bodies were intentionally

interred where they were found, within a few hours of death. Had they been left exposed in the streets or among the ruins of the city, they must inevitably have become the prey of wild birds and beasts, and quickly been torn to pieces. Secondly, the skeletons represent three distinct racial types, viz. Proto-Australoids, Mediterraneans, and Alpines, and it is highly improbable that these three types would have been found in any wandering jungle tribe. Thirdly, if the reader will turn to Plate XLII, *c*, he will see that Deadman's Lane, where one of the skeletons lay, was completely built over during the Late Period, and it was apparently during that period (either Late I or Late II) that the body was interred there under the floor of one of the then existing houses. Probably the same thing happened in the case of Group B; for we know that the whole area where this group was found was once occupied by buildings of the Late Period, which may have covered Lane 4 as they covered Deadman's Lane, though whether these particular bodies were buried under the floor of a house or in a street is not specially material; the main point is that they were buried during Late I or Late II Period, some feet beneath the then existing ground level. Similarly, in regard to Group A, though prolonged denudation had obliterated the surface remains, there can be little or no doubt that later structures once rose above the ruins of House V in which this group occurs, and presumably it was beneath a room or court of one of these vanished structures that a pit was dug and the bodies thrown into it, or may be that the living were put to death in it; for it is possible, though I do not think likely, that these groups of skeletons represent sacrifices to the dead. In face of the above facts there is no reason whatever for doubting that these burials date from the declining years of Mohenjo-daro's prosperity, and that among the various racial elements then included in the city's population were Proto-Australoids, Mediterraneans, and Alpines.

Complete burials at Harappā.

The above constitute the only prehistoric examples of complete inhumation found at Mohenjo-daro. At Harappā several examples of this mode of sepulture, which are unquestionably orthodox, have already been exposed in the lower stratum of Cemetery H, and more are likely to come to view as the excavation progresses (Fig. 2). Two of the skeletons there were still entire and lying in different postures and directions. "In some cases," says Mr. Vats, "there is no grave-furniture, but in others the skeletons are accompanied by groups of earthenware vessels, each group including an offerings' dish of the squat type, a water jar with splayed neck, sometimes closed with a small flask, flat covers and dishes and deep bowls." In two cases they are also accompanied by animal bones. Some of the flat dishes are painted on the underside, and the small flasks are also occasionally painted. From the designs, which resemble those on certain pottery from the uppermost strata of mound F at Harappā, it may be inferred that these burials are somewhat later than the Indus Period as represented at Mohenjo-daro. It should be added that in one case (H 307*a*) the skeletal remains are fragmentary, and it is questionable whether the body was buried entire or in a fractional state.

Complete burials in Balūchistān.

The same method of complete burial is also well illustrated at two sites in Balūchistān, namely at Nāl in the Jhalāwān district to the east, and at Shāhi-tump near Turbat to the S.W. At the former site some of the skeletons were provided with definite graves, others were laid in the bare earth, but in no case were they accompanied by pottery or other sepulchral furniture, though some of them had beads and other simple personal ornaments.

Nāl.

These complete burials at Nāl are ascribed by Mr. Hargreaves to the same age as the fractional burials on the same site, in which, as we shall presently see, the human remains were accompanied by numerous vessels containing food and drink, and by other small objects for the use of the dead. If Mr. Hargreaves is correct in this view—and there is no reason to question it—then the complete as well as the fractional burials at Nāl must be contemporary with the typical Nāl pottery which, according to Sir Aurel Stein, does not

make its appearance until relatively late in the Chalcolithic Age.[1] Complete and fractional burials are found also side by side at Musyān in Western Persia, and are seemingly contemporary, but in that area fractional burials appear to be the exception rather than the rule, whereas at Nāl it is just the reverse.

Shāhī-tump. The burials of Shāhī-tump, which occur in the latest strata on the top of the mounds, are believed by Sir Aurel Stein to be slightly earlier than those of Nāl. The bodies are laid in the earth, generally on their backs or left sides, and facing the north. About them, especially at the head and back, were many bowls and other vessels of earthenware, containing the charred bones of lambs, goats, and other burnt offerings for the dead. With them, too, was a variety of other articles such as stone beads, copper celts, spear-heads, and the like. In another part of the burying-ground were two large funerary jars, containing earth, ashes, and fragments of animal bones, but unaccompanied by any human remains whatever. The presence of these jars is deserving of special attention in view of what I shall have to say presently about similar jars at Mohenjo-daro.

2. Fractional Burials

Fractional burials at Mohenjo-daro. (*a*) Of this type of burial, in which only a fraction of the bones was collected and buried after the body had been exposed to the beasts and birds,[2] the best example at Mohenjo-daro is that in Courtyard 13 of House III, Section A, HR Area, described by Mr. Hargreaves at pp. 180–1 below, and illustrated in Plate XLIII, *d*. In this case the skull was found in a broken earthenware pot, and near by it some fragmentary pieces of bone accompanied by a large number of other earthenware vessels and a variety of small objects, including balls, beads, chert flakes, a shell spoon, bits of ivory, and some miniature vessels. The house in which this burial took place belongs to the Intermediate Period, and had presumably fallen to ruin before the remains were deposited in its courtyard, but how long before cannot be affirmed. The objects comprised in the burial belong to the Chalcolithic Age, but are not sufficiently distinctive to help us in determining the date of the deposit more precisely. Among them the squat carinated vessel adorned with deer, branching foliage, and other devices, which is illustrated in Plate LXXXIX, 2, is specially noteworthy. Vessels of the same form have been found at Nāl, Jemdet Nasr, and on Proto-Elamite sites,[3] and in this case the fabric and colour of the vessel suggest that, if not actually an import from the west, it was manufactured under western influence, just as I believe the Nāl ware to have been manufactured. The skull, let it be added, is assigned by Colonel Sewell and Dr. Guha (p. 643 *infra*) to the Mongolian branch of the Alpine stock.

Other examples of the same type of fractional burial are probably to be recognized in the following groups of remains, despite the fact that no human bones appear to have been recovered in three of them, viz. in (*c*), (*d*), and (*e*). The absence of human bones in these examples is not, perhaps, to be wondered at; for, where the bodies were first exposed to wild animals, it must often have happened that few, if any, of the bones remained to be buried, and what few there were, may easily have been disintegrated and disappeared in the salt-laden soil.

[1] We may conjecture that complete inhumation was practised by the older population at Nāl and fractional burial by the newcomers from the west, who introduced the Nāl pottery into Jhalāwān. For the date of Nāl, cf. pp. 99–100 *infra*.

[2] It is possible, also, that the dead had been previously buried and disinterred after decomposition had wholly or partly ceased. Cf. *JAI*. vol. xxix, p. 284.

[3] Cf. H. Hargreaves, *Excavations in Baluchistān*, pl. xvi, 9, and p. 323 *infra*.

(*b*) In a pit outside Room 72 at the south end of Lane 5, VS Area—a quantity of human bones (described by the excavator as a "basketful"), together with a large and varied collection of pottery, some terra-cotta animals, beads and pieces of chert. For detailed description, see p. 228 *infra*.

(*c*) In Room 66, House XXVII, VS Area—a large group of pottery, among which was the stem of an offerings' dish of the type that is found in graves at Kish of about 3000 B.C., and is found also in many of the graves at Harappā. In some of the vessels were charred bones, doubtless part of the offerings of food and drink which were made to the dead and of which more will be said anon. The building in which this deposit was found is of the Intermediate (probably Inter. III) Period. The deposit itself is later than the building, but earlier than the remains of the Late Period above it. See p. 228 *infra*, and for specimens of the pottery see Pl. LXXX, 41, 44, and 52.



FIG. 3.—Group of skeletal remains in Trench G at Harappā.

(*d*) In the courtyard of House XXVII, VS Area, in front of Rooms 69 and 71, and of the same age as the preceding. Besides a variety of other vessels, the pottery included a broken "offerings' dish". See p. 228 *infra*, and Pl. LX, *b*, which also shows the stratification, with remains of the Late Period on a higher level in the rear.

(*e*) In Room 126, House X, HR Area, Section B. This deposit was found on the north side of the room under two layers of brick, and included, besides a score or more of

earthenware vessels, some terra-cotta figurines, balls, fragments of alabaster and chert flakes. The deposit is probably of the Late III Period. See p. 184 *infra*.

Fractional burials at Harappā.

At Harappā more than one hundred examples of fractional burials have been exposed, but of these only one is contemporary with the Indus-remains of Mohenjo-daro. This particular one, which came to light between the 4th and 5th strata in mound AB, and is assignable to about the Late III Period, comprises two skulls, one lower jaw, and a few other bones, together with a broken "offerings' dish" and a tubular terra-cotta bead, all in the corner of a ruined house, with some brick edging added on two sides to complete a sort of grave. The skulls are brachycephalic with high-pitched nose, belonging to the Alpine type.[1]



FIG. 4.—Group of burial jars in the upper stratum of Cemetery H at Harappā.

Of a somewhat later date, though earlier, according to Mr. Vats's reckoning, than the complete burials in the lower stratum of Cemetery H, is a group of human remains in Area G, comprising some fifteen skulls, a quantity of other bones, both human and animal, several tall offerings' stands, drinking goblets, with pointed bases of the characteristic Indus type, and a variety of other earthenware vessels (Fig. 3). Mr. Vats is inclined to think that the skulls here are of victims sacrificed on the occasion perhaps of some funeral; but he advances this suggestion as nothing more than a surmise.

All the other fractional burials at Harappā occur in the upper stratum of Cemetery H, and are demonstrably later than the complete burials of the lower stratum. They differ from the earlier burials described above in that the remains of the dead are invariably deposited in

[1] Cf. Chap. VIII, p. 108.

earthenware jars and are not ordinarily accompanied by any smaller vessels for food or drink offerings. Indeed, out of more than one hundred such funerary jars excavated by Mr. Vats there is only one that contained a small vessel (probably a drinking flask). The human remains ordinarily consiśt of one skull, but occasionally of two or more skulls in a single jar.[1] In some jars, however, there is nothing more than a few bones, and in others no bones at all—a phenomenon that quite accords with what we have already observed in regard to the fractional burials of Mohenjo-daro and Shāhī-tump.



FIG. 5.—A painted burial jar from upper stratum of Cemetery II at Harappā.

The jars are of various types—some round, others ellipsoid, and others carinated—and are invariably covered with lids or potsherds. Their decoration, which is totally unlike that of the red-and-black Indus ware or indeed of any other pottery known to us, takes the form of horizontal bands, often with a broad frieze around the shoulder adorned with birds, animals, stars, and other devices, treated in a strangely fantastic manner (see Figs. 4, 5, and 6).

Fractional burials at Nāl.

In the fractional burials at Nāl, which constitute the majority of burials at that site, the excavated bones were laid either direct in the earth or in earthenware pots, usually the former. In both cases they were accompanied by vessels for food and drink offerings and by ornaments and utensils for the service of the departed, among the latter being copper tools (including an imitation one of earthenware), a grindstone, weight, and ring-stone, and a piece of red ochre. The pottery and other objects associated with these fractional burials are fully described by Mr. Hargreaves in the report quoted below.[2] As stated elsewhere,[3]

[1] See Chap. VIII, p. 108, for description of a skull from these jar burials.

[2] H. Hargreaves, *Excavations in Baluchistān*, pp. 28 and 29.

[3] Cf. Chap. VII, p. 100.

the origin and age of the Nāl culture are still problematical, but there are good reasons for believing that it was intrusive in eastern Balūchistān and connected more closely with the Early Persian than with the Indus culture.

3. Post-Cremation Burials

Post-cremation burials at Mohenjo-daro.

At both Mohenjo-daro and Harappā a class of large wide-mouthed urns has been brought to light, containing a number of smaller vases, bones of small quadrupeds, birds, or fish, and frequently a variety of other small objects such as beads, bangles, terra-cotta figurines and chert flakes, sometimes mingled with ashes and charcoal. The urns in question

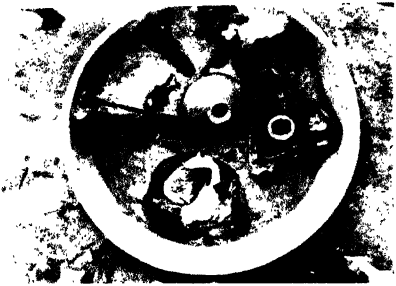


Fig. 6.—Interior of burial jar from upper stratum of Cemetery H at Harappā.

are found at both sites in buildings of all periods, generally underneath a floor or street. The smaller vessels inside them are of various forms, including bowls, saucers, pointed goblets, beakers, and sometimes miniature vases which may have been used for unguents or cosmetics. Of the urns belonging to this class at Mohenjo-daro itself, two examples are illustrated in Pl. XXV, *a*, and a third in Pl. LIX, *b*. The former were buried in the narrow northern entrance to the Great Bath, after the lower storey had been filled in and the floor level raised. They must, therefore, date from the Late Period.[1] The latter was in Lane 3, to the south of House XIX, in the VS Area,[2] which, like Lane 4, was probably built over in the Late Period.

Of other typical examples it will suffice to mention four, namely :—(1) In Room 15, House V, VS Area—an urn deposited 2 ft. 3 in. below the floor, containing six goblets with pointed bases,[3] a shell palette, a terra-cotta ball (possibly a weight), and a broken animal figurine. One of the goblets had a miniature vase inside, another a seal, and another

[1] Cf. p. 137, note 5, *infra*. [2] Cf. p. 223 *infra*. [3] These were the common drinking-cups of the time.

the vertebrae of a fish.[1] (2) Beneath a late floor of the corridor in House XXVI, VS Area—an urn[2] containing two oval-shaped vases, two goblets with pointed bases, a terra-cotta bangle, an animal figurine, and some bones which were said to be human. (3) In Lane 5, VS Area—two urns, one of which contained, besides other pottery, a broken offerings' dish and a miniature beaker, and the following objects, viz. terra-cotta bangles, and a dog of the same material, a fragment of a clay tablet, a copper nail, pieces of charcoal, and some bones. (4) The other urn in the same spot contained eleven small vases with lids, terra-cotta figurines of men and women, rams, dogs, and a goat, portions of terra-cotta wheels, two terra-cotta balls, some chert flakes, pieces of mother-of-pearl, a sealing of yellow faience (VS 210 = Pl. CXVIII, 11), some charcoal, and bones.[3]

Here, too, mention should be made of a collection of charred human bones, including pieces of a skull and finger joints which were found in the small subterranean Chamber 3 in Building XXI, Block 4, VS Area, along with a number of goblets, dishes, and other vessels (in one of which some pieces of bone were sticking), badly-baked clay tablets, broken shell bangles, a terra-cotta figurine and a chert scraper—the whole mingled with ashes and charcoal.[4]

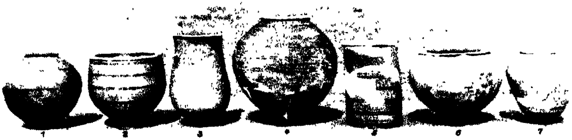


FIG. 7.—Types of vases commonly used for funerary offerings at Harappā.

Similar urns at Harappā.

At Harappā the data in regard to these offerings' vessels are more abundant than at Mohenjo-daro. In the course of the last three seasons, Mr. Vats has brought to light there 126 urns of this class. They occur at all depths, and are said by Mr. Vats to be readily distinguishable from the vessels used for ordinary domestic purposes. Typical specimens of them are illustrated in Fig. 7, the commonest shapes being Nos. 2 and 4. Two rare types not included in this photo are a large *lota*-shaped urn and a large *deg*, both with pointed bases. All these vessels contained bones of animals, fishes, birds, etc., in varying quantities, among their contents being a tortoiseshell in No. 3868 (Fig. 8) and antlers in four others. "Along with the bones," says Mr. Vats, "were pointed goblets, bowls, saucers, and other small vessels, human and animal toys, balls, beads, bangles, toy-carts, wheels, triangular cakes, river shells, decayed grain, ashes and charcoal." In three of the vessels were impressions of leaves on the earth ; in two, vestiges of seeds of the melon species ; and in another, which is inscribed, impressions of chaff and straw.

Purpose of offerings' urns.

Now, in cases where charred human bones and ashes are found accompanied by numbers of vessels and objects, there can be no question that we are in the presence of post-cremation burials, and that, as in many of the fractional burials described above, the vessels contained

[1] Cf. p. 217 *infra*.
[2] Lower of the two vessels described at p. 227 *infra*.
[3] Cf. pp. 228–9 *infra*.
[4] Cf. p. 224 *infra*.

offerings of food and drink intended for the use of the departed in their after-life. But it is only rarely that human bones are found in this class of urns. Indeed, out of the 126 urns of this class exhumed by Mr. Vats at Harappā, only one contained a human bone, and that showed no signs of burning. As a rule, the bones are those of lambs, goats, chickens, etc., and in some cases there are no bones at all. What, then, is the meaning of these numerous urns, with their contents of smaller vases and other articles, not infrequently mingled with ashes, but without any human bones? I think there can be only one answer. It is that they served the same purpose as their counterparts containing human bones and other articles, only that in their case there were no bones left after cremation to be buried. The absence of such bones does not, in effect, present any real difficulty; for it is still a practice in the Panjāb to take the remains of the bones from the funeral pyre, pound them to dust, and then



FIG. 8.—Typical example of open-mouthed urn with funerary vases and tortoiseshell inside

commit them to the river. Some such practice may well have obtained among the Indus people, who may either have buried the pounded dust in these urns, in which case it would scarcely be detectable, or else may have thrown the ashes into the river and buried only an urnful of offerings in the house of the dead.

Post-cremation burials in Balūchistān.

That the urns contained offerings for the dead and were not merely receptacles for articles of ordinary domestic use is, I think, manifest not only from the peculiar and uniform character of their contents, and the presence of lambs', chickens', and fishes' bones in most of the smaller vases, which can only be satisfactorily accounted for on the hypothesis that they were offerings of some sort, but also by their striking resemblance to post-cremation urns in Balūchistān,

the funerary nature of which is not open to dispute. Of such urns a large number were found by Sir Aurel Stein in both northern and southern Balūchistān, but only at sites where the red-and-black or Mehī wares predominated and where there is reason to suspect the presence of specially strong influence from the Indus side, e.g. at Dabar-kot, Periāno-Ghuṇḍai, Mughal-Ghuṇḍai, Mehī, and Suktagen-dor. On all these sites the burial customs seem to have been identical; the cinerary urns, that is to say, were buried either within or in close proximity to dwelling-houses and contained precisely the same sort of small vessels, animal remains, and other objects as are found in the urns at Harappā and Mohenjo-daro, generally with human bones and ashes intermixed, but not infrequently without them. Side by side with the urn-burials at Mehī Sir Aurel found also several examples of the cremated bones having been left on the spot where the pyre was made, and vessels and other objects subsequently placed near them. Such burials he took to represent a transitional stage leading on to the deposit of the entire body in the earth, as at Nāl and Shāhī-tump; but the processes of cremation and inhumation are so fundamentally distinct that this view must obviously remain open to question.

Conclusions. Cremation probably the usual method of disposing of the dead during the Indus Period.

To revert, however, to Mohenjo-daro and Harappā—so far as our evidence goes at present, it seems probable that the most usual method of disposing of the dead during the flourishing period of the Indus civilization was by cremation. That cremation was practised is conclusively proved, as we have seen, by the finding of cinerary urns or other receptacles containing calcined human bones and ashes together with vessels of burnt and other offerings for the dead and sundry articles for use in the after-life. That the practice, moreover, was a wide one is suggested, though not definitely proved, by the discovery of many other urns containing vessels for offerings and other articles intended for the dead but without any actual human bones—the inference in their case being that the calcined bones which remained over from the pyre were either ground to powder, as they are in the Panjāb to this day, and cast into the river, or disposed of in some other way. The conclusions arrived at in regard to these cinerary and cenotaphic urns are amply confirmed by Sir Aurel Stein's discovery of similar urns at various sites in Balūchistān, many containing both human bones and vessels of offerings, but many only the latter.

Fractional and complete burials exceptional.

The practice of exposing the dead to wild animals and then burying the remains (if any) of the excarnated bones seems to have been rare up to the close of the Indus Period as represented at Mohenjo-daro and Harappā. At Mohenjo-daro there are only five such burials altogether; at Harappā there are but two, one a group of three skulls, the other of fifteen or more, which is perhaps not to be regarded as a normal example. On the other hand, there is a big group of fractional jar-burials at Harappā, evidently belonging to a later age, in which the excarnated bones were placed in urns instead of in the ground and were unaccompanied by any of the offerings' vessels or other objects found in the earlier class of fractional burials.

Equally rare, if not rarer, are the examples of complete burial. Indeed, if we eliminate the remarkable series of skeletons at Mohenjo-daro, which can hardly be taken to represent the ordinary orthodox burials of the day, the only examples left are those in the lower stratum of Cemetery H at Harappā, which their pottery proves to be later than the Indus Period with which we are dealing.

Evidence from Balūchistān.

Now, I must repeat what I said above, that the data at our disposal are too meagre as yet to admit of reliable conclusions being drawn from them. As the digging proceeds, it may well happen that discoveries will be made which will put a new complexion on these problems. Nevertheless, it is permissible at this stage to consider in what direction our evidence is tending. That there is likely to have been a definite line of demarcation between post-cremation burials on the one hand and fractional or complete burials on the other, is,

I think, indicated by the evidence from Balūchistān. In that country, post-cremation burials of the Chalcolithic Age are abundant, but they are confined to sites where pottery characteristic of the Indus culture prevailed. Fractional and complete burials, on the other hand, have been found at Nāl and Shāhī-tump, where the prevailing culture appears to be Persian rather than Indian. In thus bracketing together the fractional and complete burials I do not mean to imply that these two methods of disposing of the dead have more in common with each other than they have with cremation. It is merely because both in Balūchistān and Western Persia they happen to have been practised side by side in places where cremation was not in vogue.

Fractional and complete burials may be due to immigration from west.

In the light of these facts it is not unnatural to suspect that the few examples of fractional burials that appear at Mohenjo-daro and Harappā during the Indus Period are due to the presence of foreign elements from the west in the population of these cities, and that the increasing numbers of complete and fractional burials which are found at Harappā in the post-Indus period may result from extended immigration from the same quarter which coincided with the decline in power of the Indus people.

Chapter VII

EXTENT OF THE INDUS CIVILIZATION

Uniformity of the Indus culture.

ONE of the most striking facts revealed by the excavations at Mohenjo-daro and Harappā is the complete uniformity of their culture. Though these two spots are some four hundred miles apart, their monuments and antiquities are to all intents and purposes identical. Houses, drains, bricks, pottery, weapons, household utensils, ornaments, seals—all are cast in the same mould and so alike that it is impossible to distinguish between them. Some structures and antiquities there are, of course, at both sites to which no counterparts have yet been found at the other—the Great Bath, for example, at Mohenjo-daro, or the Corridor Hall at Harappā—but there is nothing in the structural character of these buildings or in the fabric and design of any of the smaller antiquities which enables us to say of them "this belongs to Mohenjo-daro" or "that belongs to Harappā". Such consistent uniformity in all the appurtenances of daily life could never have been achieved and could certainly never have endured through so many centuries of occupation had not the Indus civilization been deeply rooted throughout Sind and the Panjāb and already consolidated for long ages before it first breaks upon our vision. To this civilization I have tentatively given the name of "Indus", because of its close association with the country watered by that river and its tributaries. For all we know, however, it may have extended well beyond the eastern limits of the Panjāb. On that point we have no specific evidence one way or the other. If it proves eventually to have done so, the term "Indian" rather than "Indus" may be more appropriate; but for the moment it seemed advisable to avoid designating it by a name which might be taken to imply a wider diffusion than is actually warranted by our discoveries. Let me emphasize the fact, however, that we have no sufficient grounds as yet for affirming positively that this civilization was limited to the Indus Valley and the plains of the Panjāb. Ten years ago we knew nothing of its existence at all, and since then we have been too pre-occupied with the exploration of Mohenjo-daro and Harappā and with following up its tracks towards the west to find time for tracing it eastward across Rājputāna or down the valleys of the Jumna and the Ganges; and, until that has been done, it would be premature to assume that it stopped short of those areas. This is a point to which I shall have occasion to revert later; meanwhile, I draw attention to it here merely in order to forestall any misconception on the part of the reader.

Other Chalcolithic sites in Sind and the Panjāb.

Besides Mohenjo-daro and Harappā there are a number of other sites in Sind and the Panjāb which belong to the same Chalcolithic Age. These are shown underlined in red

in the map inserted at the end of this volume. Starting from the south there is Gujo,[1] about 14 miles east of Bhambor and 12 miles from Tatta; and on the left bank of the Indus, opposite Jarak, is Budh-ke-Takar.[2] Then, north of Kotri, there is Karri, and further north still, in the Lārkāna district, is Lohumjo-daro. Near Mohenjo-daro itself is Bādah, and outside the town of Lārkāna, the important site of Jhukar. A little south of Rohri, again, there is a big group of mounds at Aror, or Alor, as it should perhaps more correctly be written, while in the Upper Sind Frontier district is Limojunejo; and on the old bed of the Hakrā, near the eastern boundary of the Sukkur district, Vijnot. At all except one of these sites finds have been made such as painted pottery, chert flakes, and cores, copper implements, shell bangles, and the like, which indicate that they were occupied during the same period and shared in the same culture as Mohenjo-daro and Harappā. The exception referred to is Budh-ke-Takar, where Mr. G. E. L. Carter, late of the Indian Civil Service, records that he found various neolithic implements but no painted pottery or other objects specially typical of the Chalcolithic Age. It may be, therefore, that this site was occupied during the Neolithic but not during the Chalcolithic Period.[3]

Neolithic artefacts in Sind.

Neolithic artefacts are abundant in Sind. They have been found in great numbers on the hills round Rohri in the Mol Valley, and throughout the Kīrthar Range generally. Cairns, barrows, and other rough stone structures, which have been ascribed to the Stone Age, are numerous in the Mol and other Valleys of the Kīrthar Range, and Mr. R. D. Banerji tells of the existence of "prehistoric settlements" on the banks of the Manchhār Lake and near the hot springs at Tīrth-Lāki in the extreme north of the Karāchi district. The information, however, that we possess about these rude stone monuments is altogether too vague and shadowy to permit of reliable conclusions being drawn from it. Such monuments are common in Balūchistān, where some certainly go back to the Chalcolithic Age, but others belong to early historic times, and others, again, are quite modern. Before, then, any of these stone structures can be assigned to Chalcolithic times, they need to be carefully examined and surveyed. Nevertheless, the character of many of the artefacts found in Sind leaves little room for doubt that they are true neoliths and of an age anterior to those recovered at Mohenjo-daro and Jhukar. Long before Mohenjo-daro was excavated or we knew anything of the Chalcolithic culture of Sind, Mr. W. T. Blandford pointed out that there was a marked difference between the nummulitic flint flakes and cores found in the bed of the Indus at Sukkur and those from the hill-tops round about Rohri, and he surmised that the former belonged to a later age, when the art of flint chipping had been brought to greater perfection.[4] This surmise was undoubtedly correct. We know now that the flakes and cores from the Indus bed are identical with those found at

[1] More correctly this site should be designated "Tharro", a hill about 2 miles from Gujo. Recently, Mr. N. G. Majumdar, of the Archæological Department, has visited Tharro and collected there numerous chert flakes and cores and potsherds of the Indus class; and he has also found some pictographic signs engraved on the neighbouring rocks.

[2] Or Budh-jo-Takar.

[3] Since the above was written, Mr. N. G. Majumdar has discovered two more Chalcolithic sites of importance in Southern Sind. One is Chānhu-daro in the Nawāb Shāh district, 4 4 miles N.E. of Sakrand and 7·4 miles W. of Nawāz Dahri Railway Station; the other is Amri in the Kotri Division of the Karāchi district, about 2 miles E. of Amri Station. At the latter site Mr. Majumdar unearthed much pottery of the typical Indus class and, in a lower stratum, a new kind of pottery which he describes as "a thin ware of pale red colour bearing designs in black, chocolate, or light red on a cream or pink background; what is almost an invariable feature of the vases is that their necks are painted both inside and out with a black slip".

[4] See W. T. Blandford, *JASB.* 1875, pp. 135–6; Sir John Evans, *Geol. Mag.* 1866, pp. 433–4; J. Coggin-Brown, *Cat. of Prehist. Antiq. in Indian Museum*, p. 120.

Mohenjo-daro and Harappā, and were produced in the Chalcolithic Period, and we are justified, therefore, in concluding that the cruder stone implements from the Rohri hills and elsewhere belong to an earlier age when neolithic man was occupying most of the Indian sub-continent.

Of the sites enumerated above, only one besides Mohenjo-daro has actually been excavated. This is Jhukar, near Lārkāna, where three clear and distinct periods of occupation have been revealed, the earliest contemporary with Mohenjo-daro, the latest of Kushān date, and the middle one intermediate between the two, but distinguished by a class of painted pottery which suggests that, though prehistoric, it was, nevertheless, substantially later than the uppermost settlements at Mohenjo-daro or Harappā.

Diffusion of Indus culture in Sind and Panjāb.

So far, therefore, as Sind is concerned, there is ample and convincing proof that the whole country from north to south was permeated in the Chalcolithic Age by the long protracted civilization which we have unveiled at Mohenjo-daro and Harappā. In the Panjāb the evidence is more meagre. To the north-east we have found traces of this culture as far as Rupar on the Sutlej, below the Simla hills, where experimental trenches on a small site have yielded bricks and earthenware vessels identical with those found at Harappā. West of the Indus, also, we have followed it through Loralai, the Derajāt, Żhob, and northwards as far as Bannu. Then, in the heart of the Panjāb, there is Harappā on the banks of the ancient Rāvi, a city which appears to have been occupied during a still longer period than Mohenjo-daro, and which, if we may judge by the size of its crumbling mounds, was considerably bigger than that settlement.

With the existence of the Indus culture thus attested in the Central Panjāb as well as on its extreme west and east, there can be no reasonable doubt that it extended over the intervening country also, and that, whenever the time may come for surveying the ancient beds of the Indus and its affluents, many more remains of the Chalcolithic Age will come to light.

All-important part played by the great rivers in the evolution of Chalcolithic civilization.

That this Indus civilization was part and parcel of that greater civilization which during the Chalcolithic Age extended across the broad Afrasian belt, and that it was intimately related to other branches of that civilization in Western Persia and Mesopotamia, became clear almost from the first moment of its discovery. And this, indeed, was only to be expected. For the Afrasian civilization was literally the offspring of the great rivers of Northern Africa and South-Western Asia and dependent on them for its evolution. Without their help man could never have achieved what he did. So long as he was in the hunting or nomad stage, he might wander at will wherever he could find game or pasturage and sufficient water for his wants, and, even when he had turned to agriculture as a means of life, he might subsist in small communities wherever cultivatable land was available and the rainfall adequate. But it was only on the banks of the great rivers that he could develop agriculture on a scale sufficient for the needs of a dense population ; there only that he could organize society in great cities ; and there only that he could maintain that commercial intercourse with distant communities which was indispensable for providing him with the necessities or luxuries of life and for quickening his inventive and intellectual faculties. And let it be remembered that the importance of the river was all the greater in the early days when there were no ploughs, no wheeled vehicles, few beasts of burden, and little or no means of fertilizing the land artificially ; since it was the river that enriched the soil, and by its seasonal inundation lessened the labour of hoeing and provided regular irrigation for the growing crops, as well as a highway by which the produce of the land could be brought into the cities.

With the contributions to the common stock of this civilization made by the other

great rivers of Afrasia—by the Nile in Egypt, by the Euphrates and Tigris in Mesopotamia, by the Kārūn and Karkheh in Western Persia—we have long since been tolerably familiar, and we knew a little, too, of the part played by the Helmand. It can hardly surprise us, therefore, to find the river valleys of Sind and the Panjāb—the broadest and richest of all the valleys of Southern Asia—taking their share in the evolution of this civilization ; nor will it surprise us if, as the field of exploration widens, we find that the valleys of the Jumna and the Ganges in India, of the Oxus and other rivers of Transcaspia, prove to have been vital centres of human activity and progress in the Chalcolithic Age, though, in regard to Transcaspia, it is unlikely that its more rigorous climate could have been as favourable to the advancement of civilization in its earlier stages as were the warmer river valleys of the South.

Unity in diversity of Chalcolithic civilization.

In the nature of things a civilization as widely diffused as the chalcolithic, with ramifications extending as far west as Thessaly and Southern Italy, and as far east, perhaps, as the Chinese Provinces of Honan and Chih-li, could not have been homogeneous throughout. The peoples who participated in it were of different races, spoke different languages, wrote different characters, worshipped different deities, and in other ways displayed different orders of mentality. It is too much, therefore, to expect that there should have been a close correspondence in their material cultures. Nevertheless, we must be careful not to exaggerate the differences between them or to regard them as entirely self-centred and self-sufficient communities. Each no doubt had its own particular type of civilization, which was adapted to suit local conditions. But between them all was a fundamental unity of ideas which could hardly have been the result of mere commercial intercourse. Let me illustrate what I mean by taking one or two concrete examples. The signs which each country devised to record its speech differed materially from those of its neighbours—the hieroglyphs of Egypt from those of Crete, the Cretan from the Sumerian, the Sumerian from the Elamite, and so on. But, however much these scripts differed from one another, however much they demonstrated the independence of their authors, they were all based on one and the same idea—the idea of using pictured signs to represent not only objects or concepts, but actual sounds. When, therefore, we attempt to estimate the degree of unity or diversity in the chalcolithic civilization, we must admit that this wonderful invention, which is fundamental to each and every mode of writing, counts for far more than the diversity which distinguishes the various systems of pictured signs. Another typical illustration may be taken from spinning and weaving. On the Indus, cotton was used for the thinner textiles ; on the Nile, flax. Each in its own way was an important discovery and a valuable contribution to the common stock of human knowledge. But more valuable than either was the discovery of how to spin, and how to weave, and this discovery was the universal possession of the then civilized world—one of the many factors that justify us in regarding this culture as a more or less coherent whole. It is the same with the painted pottery. Each of the river valleys in which this civilization was centred had its own ceramic wares, with shapes and designs adapted to local needs or ideas, but all alike shared the secret of the potter's wheel and of how to fix the colouring on the vessels by firing—secrets which are not likely to have been discovered independently.

The Indus civilization no less individual and national than other great River civilizations.

These examples—and many more might be cited—will suffice to make clear what I mean by the fundamental unity of this civilization. The point is one that needs to be stressed, because it has been the fashion to emphasize the diversity of this civilization, while ignoring its essential homogeneity, and in the case of the particular branch with which we are now concerned, we should certainly misunderstand its evolution if we conceived of it as a wholly isolated and independent growth. It is just as individual, just as national in character as

other branches are—the Sumerian, for example, or the Egyptian ; and it is no less typical of the region where it took shape than the former is of Southern Mesopotamia, or the latter of the Valley of the Nile. Thus, to mention but a few of its leading features, there are, first and foremost, the domestic houses, the unique character of which has already been emphasized ; and with the private houses must be coupled also the great public baths, for which there is no parallel elsewhere until we come down to Roman times. A feature of another kind, but no less distinctive, is the remarkably naturalistic quality of the Indus art, which is wholly unlike the contemporary art of Elam, Sumer, or Egypt ; another is the decoration of its painted pottery, easily distinguishable from any other red-and-black wares known to us, still more easily from the paler wares of Persia and Mesopotamia ; another, the use of cotton instead of flax for light textiles ; another, the highly evolved type of the characters devised for writing. But behind these and manifold other traits that are peculiar to the Indus civilization and give it its national character, is a tissue of ideas, inventions, and discoveries which were the common property of the then civilized world and cannot be traced to their respective sources. Some may have originated among the Indus people, but many must have been derived from elsewhere, borrowed, may be, from other regions, or in some cases inherited from earlier ages, when the races of Afrasia were perhaps less heterogeneous. Such are the domestication of animals ; the cultivation of wheat, barley, and other grains ; the growing of fruits ; the irrigation of land with the aid of artificial canals and embankments ; the building of houses ; the organization of society in cities ; spinning and the weaving of textiles and the dyeing of them in various colours ; the use of the potter's wheel and the decoration of earthenware with encaustic designs ; navigation by river and the use of wheeled vehicles on land ; the working of gold and silver, of copper, and of tin ; the recording of speech by means of picture signs ; and the fashioning of ornaments from faience, ivory, bone, shell, and semi-precious stones. Seeing that these and many other elements were basic to civilization throughout the entire Afrasian belt and just as distinctive of it in other regions as they are in the Indus Valley, we should clearly be in danger of straying from the truth if we failed to recognize that the Indus civilization is an integral part of the whole. On the other hand, we should be equally far from the truth if we ignored those other and hardly less important features which are the special attributes of the Indus civilization and which give it its local and national complexion.

But indissolubly connected with other civilizations by community of ideas and inventions.

Extension of Indus civilization eastward.

We have now to consider how far this Indus civilization, as distinct from other regional civilizations of the same age, extended to the east and west. To take the east first, there is some slight evidence in the shape of stone flakes and cores, shell, earthenware, and other objects which have been picked up on the surface of various mounds [1] in Kāthiāwār, to suggest that this civilization extended in a south-easterly direction at least as far as the Gulf of Cambay. But though the objects in question might equally well have been found at Mohenjo-daro or Harappā, it must be confessed that none of them are of a sufficiently distinctive type for it to be affirmed with certainty that they belong to the Indus sphere of culture. On the other hand, it would be rash to assume that the Indus culture did not extend even beyond the Gulf of Cambay or further north across Rājputāna, since, as already stated, no effort has yet been possible to follow it up eastward. That it did not extend much beyond the land watered by the Indus and the Great Mihrān and their tributaries is probable enough. Other civilizations of this age are mainly confined to the riverine valleys in which they arose, and there is no reason to suppose that the Indus civilization was an exception to this rule. Nevertheless, it is difficult to believe that, while the Panjāb and Sind were in possession of this highly

[1] R. Bruce Foote, *Indian Prehistoric and Protohistoric Antiquities*, pp. 146–53.

advanced culture, the valleys of the Jumna and the Ganges, of the Narbadā and the Tāpti could have been far behind them. Our knowledge of prehistoric culture in these valleys is very scanty. At present it is drawn almost exclusively from artefacts of the Stone and Copper Ages found on the surface of the ground, and from these objects we glean little more than that this part of India must have passed through much the same Stone and Metal Ages as the rest of South-West Asia and that, so far as the weapons and implements of the people are concerned, it was generally on a par with those of the Indus region. Whether its peoples possessed cities and houses and all the other amenities of life such as we find in Sind and the Panjāb, has yet to be established. Meanwhile, it may be remarked that there is nothing in Vedic or later literature or in the diffusion of the pre-Āryan races or languages, so far as they are known to us, to suggest that the pre-Āryan people of the Panjāb and Sind were markedly different in culture from those of the Jumna and Gangetic basins further east, and it may also be added that a people accustomed to carry on trade and commerce as far afield as the Indus people were, were prima facie likely to have made their influence felt far beyond the limits of the Indus Valley.

Extension of Indus civilization westward.

Westward of Sind and the Panjāb the materials at our disposal are more abundant. In 1925–6 Mr. H. Hargreaves, then Superintendent of the Frontier Circle, excavated certain mounds at Nāl in the Jhalāwān Division of the Kalāt State, which had yielded the remarkable series of painted funerary vases published by me twenty-five years ago,[1] and in the two following winters Sir Aurel Stein was deputed to make a general archæological reconnaissance of Southern Wazīristān and Balūchistān. The results achieved by these two officers have already been described in three Memoirs of the Archæological Survey of India,[2] and there is no need to discuss them in detail, but there are certain broad facts emerging from their discoveries that claim attention, as they have an intimate bearing on the Indus problems.

Balūchistān not an important cultural centre.

And first let it be said that Balūchistān, with its barren mountain ranges, stony wastes, and small extent of arable land, could never have been an important cultural centre. Sir Aurel Stein's explorations have, it is true, shown conclusively that much of what is now and was even in the days of Alexander the Great nothing but barren wilderness, at a more remote date still had been well cultivated land capable of sustaining a settled and relatively dense population. Evidence of this greater productiveness and prosperity during the Chalcolithic Age was observed time and again by the explorer in the course of his journeys through the central and southern districts, and was explained by him on the assumption—as to which there can be no shadow of doubt—that the country had then enjoyed a more copious rainfall. Nevertheless, making all allowance for more favourable climatic conditions as well as for the intensive cultivation of every available acre of land (to which the innumerable *gabar bands* and other irrigation works bear witness), it yet remains true that Balūchistān could never have been other than a comparatively poor country or other than largely dependent for its culture on the richer and more populous regions that adjoined it—on Sind and the Panjāb to the one side, on Persia and Sīstān to the other, with Mesopotamia in the background further west.

Cultural dependence on neighbours illustrated by pottery.

This cultural dependence of Balūchistān on her neighbours is illustrated with singular clarity in its ceramic wares, an extensive collection of which, gathered from over a hundred sites, was brought back by Sir Aurel Stein. Any discussion of these wares, unfortunately, is hampered by the fact that they are still unclassified and unpublished,[3] and the difficulty

[1] *ASR.* 1904–5, p. 105, and pls. xxxiii and xxxiv.

[2] H. Hargreaves, *Excavations in Baluchistan* (Mem. No. 35); Sir Aurel Stein, *An Archæological Tour in Wazīristān and Northern Balūchistān* (Mem. No. 37), and *An Archæological Tour in Gedrosia* (Mem. No. 43).

[3] Since this was written, Sir Aurel Stein's two Memoirs referred to in the preceding note have appeared, containing many illustrations, but no classification, of these wares.

is all the greater because space does not permit of any of them being illustrated here. I hope, however, that the following brief account of them, rough and ready as it admittedly is, will serve provisionally to give an idea of their extent and variety, of the relation in which they stand to one another, and of their bearing on our Indus problems.

Classification of Balūchī pottery.

Broadly speaking, the Balūchī pottery falls into three main divisions, viz. red-and-black wares, hybrid wares, and buff wares ; and these three divisions may be subdivided again into the following classes :—

RED-AND-BLACK WARES

1. Red-and-black ware of the true " Indus " variety.
2. Red-and-black Balūchī ware.
3. Sūr-jangal ware.

HYBRID WARES

4. Polychrome banded ware.
5. Mehī ware.

BUFF WARES

6. Buff Balūchī ware.
7. Grey ware.
8. Shāhī-tump ware.
9. Nāl ware.

Of the above main divisions, the first or red-and-black class, which comprises all wares with designs in black, brown, or purplish-brown on a red ground, predominates over Eastern Balūchistān, Loralāi, Zhob, and the Derajāt west of the Indus, and links up with the red-and-black ware which is characteristic of the whole of the Indus region. The third or buff ware division, which comprises all wares with designs in black, grey, brown, or red on a buff, cream, grey, or greenish ground, predominates over Western Balūchistān and Sīstān, and links up with the light coloured wares of Persia and Mesopotamia. In the middle districts, like Quetta-Pishīn, the two groups are about evenly divided, but the line of demarcation between them seems to have been a fluctuating one, the red-and-black ware predominating at one time in certain areas, the buff ware at another, and, as might only be expected, the two groups combined on occasion to produce hybrid fabrics, the ground colouring of which was partly red and partly buff, with the two colours disposed in broad horizontal bands. Let it be added, too, that the mutual influence which these two groups of pottery exerted upon each other is clearly shown by the way in which the shapes and designs of the one are not infrequently borrowed by the other.

Indus ware.

Of the nine classes the first, viz. the true Indus ware, has been found in all the strata so far explored at Mohenjo-daro as well as in the corresponding strata at Harappā, but not in the latest deposits on the latter site. West of the Indus it occurs at Dabar-kot in Loralai, besides several other places in the Derajāt and Southern Wazīristān, to which it was presumably imported from the Panjāb and Sind, since the prevalent ware in those regions is the local red-and-black ware (Class 2) and the polychrome banded ware (Class 4).

Red-and-black Balūchī ware.

The second class of ware, which may conveniently be termed red-and-black Balūchī ware, resembles the Indus pottery in so far as it is a red ware with or without a slip, relieved with designs in black or dark brown, but its fabric is generally coarser and its patterns less free. It is found throughout Eastern Balūchistān and occasionally in the western districts also,

as well as in Sīstān, but its chief locale seems to be the Derajāt, Southern Wazīristān, and North-East Balūchistān from Bannu to the south of Loralai, some of the sites which have yielded it most plentifully being Dabra, Kot-Kat, and Shāh Zamāni-dherai near Tank, Shāhīdān near Bannu, Surkh-dherai and Chaudhwān south-west of Dera Ismail Khān, Periāno-Ghuṇḍai, Kaudanī, Mughal-Ghuṇḍai and Karezgai in Zhob, and Rāna-Ghuṇḍai and Dabar-kot in Loralai. It is found also in common with "buff" ware at Spīna-ghuṇḍai, Krānai, and other sites in the Quetta-Pishīn area. As some of the finest of this red-and-black pottery comes from Zhob, it might, in order to distinguish it from the other red-and-black wares of Balūchistān, conveniently be called Zhob ware, but I have hesitated to adopt this term, lest it might lead to misunderstanding as to the range of country over which this pottery is found.

That this "Balūchī red-and-black" pottery was contemporary with the "Indus" pottery was proved by its presence in the same strata as the latter at Dabar-kot, but that it extends down to a later date than the last settlements at Mohenjo-daro is rendered probable, if not certain, by the obviously late and decadent character of many specimens, particularly from the mounds of Chicha-dherai, Aba-Khel, Kaudanī, Chaudhwān, Dabra, and Adamzai.

Sūr-jangal ware.

While the above type of red-and-black pottery is widely diffused over the Trans-Indus country and most of Eastern Balūchistān, there is a local variety of it of a distinctive character which is found in the Loralai district. This is the ware to which I have ventured to give the name of "Sūr-jangal", for the reason that most of the specimens in our possession were brought by Sir Aurel Stein from that site, though the ware is found in smaller quantities at other sites also, notably at Mughal-Qila and Rāna-ghuṇḍai. It is generally thinner in texture and better burnt than the other red-and-black pottery of Balūchistān, and its ground colour is frequently purplish-red rather than terra-cotta; it is distinguished, moreover, from other red-and-black wares by its ornamentation, which is remarkable for its exceptionally fine line work and the præter-naturally long thin legs of the humped bulls which constitute one of its most important motifs.

Polychrome banded ware.

Of the two classes of hybrid wares (4 and 5) the former, which I have called "polychrome banded ware", is found at most of the sites in North-Eastern Balūchistān, Southern Wazīristān, and the Derajāt which have yielded the local red-and-black Balūchī pottery.[1] It seems, in fact, to have been evolved out of that pottery under the influence of the paler buff wares intruding from the west. Its distinguishing characteristic is the use of both red and buff or greenish-buff for the slip of a vessel, the two colours being disposed side by side in horizontal bands, and further decorations applied in black, brown, red, or sometimes white. For the rest, the designs on this ware take the same simple forms as they do in the Balūchī red-and-black or buff wares (Classes 2 and 6). It is a misfortune that little stratigraphical evidence is yet available as to the history of this polychrome banded ware; but it seems fairly certain that, like the Mehī ware, it endured for a long period of time and that it was to some extent contemporary with the Balūchī red-and-black pottery.

Mehi ware.

The ware classed as Mehī is the most stylish of all the red-and-black or hybrid wares. It was found by Sir Aurel Stein most abundantly at Mehī and Kulli in Kolwa, but occurs at many other sites in the Mashkai and Kej Valleys and as far west as Shāhī-tump and Suktagēn-dor. Most of it is red-and-black, but with the red-and-black is invariably mixed

[1] Among the many sites where the polychrome banded ware has been found may be mentioned Rāna-ghuṇḍai, Sūr-jangal, Mughal-ghuṇḍai, Adamzai, Chaudhwān, Dabar-kot, Duki-dherai, Spina-ghuṇḍai, Mughal-qila, Nimkai, Surkh-dherai. In the Quetta-Pishīn area it appears to be relatively scarce.

a certain proportion of polychrome banded ware resembling in technique the polychrome banded ware described above but differing from it in the matter of design, just as the red-and-black Mehī ware differs in design from the red-and-black Balūchī ware. Were it not, indeed, for its decorative motifs, the Mehī ware would have no claim to be placed in a separate category, since in technique and colouring it corresponds closely with the two classes described above, viz. with the red-and-black Balūchī pottery on the one hand, and with the polychrome banded ware on the other ; and it may be inferred that it was evolved simultaneously and in the same manner as those wares. Its decorative motifs, however, are of a kind to distinguish this ware sharply from all other classes in Balūchistān. They consist for the most part of bands of schematic fishes, humped bulls of a particularly elongated form (the antithesis of the bulls on the Sūr-jangal ware), conventionalized foliage of the *pipal* and other trees, and long lines of horned ibexes. These last resemble the lines of ibexes on the Musyān and Susa II pottery, and the connection with that pottery is further indicated by certain other motifs—trees, snakes, double triangles, and chequers—as well as by the panels into which the horizontal bands are sometimes divided. Thus, although the red-and-black technique connects the Mehi ware with the Indus pottery, the polychromy of other examples, coupled with the decoration generally, points to influence from the Persian side.

Buff Balūchī ware. The next class of Balūchī buff ware comprises a large and varied body of pale fabrics, with a ground colouring ranging from pale to dark buff, cream, grey, or greenish-yellow, and with designs generally in brown, black, or occasionally in red. It is found predominating throughout the western districts and Sīstān, but occurs spasmodically as far east even as Loralai, Zhob, and the Derajāt. The decoration consists of the simplest patterns, generally of a geometric kind and without any of the stylishness which characterizes the Mehī or Nāl wares. The fabrics included in this class may be reckoned as the western counterpart of the Balūchī red-and-black fabrics, linking up with the Persian and Mesopotamian pale wares in the same way as the latter linked up with the Indus red wares, and invading on occasion the latter's field, just as their own field was invaded by the red-and-black wares.

Grey ware. To the same category of light-coloured western wares belongs the fine grey ware (Class 7) which is common in Sīstān, and still more so in South-West Balūchistān (from which district it probably emanated), but occurs also, though less frequently, in districts as far afield as Zhob and Loralai.

Shāhī-tump ware. Another pale grey ware of a rougher but singularly interesting type is the Shāhī-tump funerary ware of Class 8. Although the graves in which it was found are proved by their location to be relatively late, nevertheless the ware itself is strangely archaic-looking, both as to fabric and decoration, and is in fact probably archaistic, reproducing, that is to say, a much older type of pottery which, as Sir Aurel Stein suggests, had once been made for ordinary household purposes and afterwards religiously perpetuated for the use of the dead, in order that in their future lives they might live after the fashion of their ancestors.

Nal ware. Though emanating from the Jhalāwān and Nūndara areas, the Nāl ware belongs essentially to the western group of pale pottery and has scarcely anything in common with the red-and-black pottery of Eastern Balūchistān. Some specimens of it, it is true, are executed in red and black, but these are exceptional and doubtless due to contamination. The bulk of it is pale or dark buff, straw-coloured or of greenish hue, with designs applied in brown or sepia or black and filled in *after firing* with blue, green, red, yellow, or white, certain of its linear decoration showing a marked resemblance to that of the Susa I pottery.

[1] In many of the Musyān vessels the ground is partly buff, partly red, decorated with black, brown, or red designs. But the Musyān pottery is far less stylish than the Mehi.

When first discovered this Nāl ware was thought to be exclusively a funerary ware, partly because of its archaistic patterns, but more especially because its evanescent colours and unusually delicate fabric were ill-suited to ordinary domestic usage. Subsequent exploration, however, has revealed the fact that the Nāl ware is prevalent on various ancient town sites, particularly in the Nūndara district, and must have been made for household as well as funerary purposes. Observations, too, made on these sites have led Sir Aurel Stein to the conclusion that this ware belonged to a relatively late period—late, that is, as compared with the Mehī ware or the typical red-and-black ware of Zhob and Loralai. This is an important point, because, if Mr. Mackay is right in assigning the Nāl ware to about 3000 B.C., it means that most of the Balūchī wares described above would have to be relegated to the fourth or even fifth millennium B.C., and with them we should also have to push back the date of the Indus red-and-black pottery, which is almost certainly contemporary with the finer kinds of Balūchī red-and-black ware of Zhob and Loralai. These are problems, however, which will have to await further stratigraphical evidence from representative sites in both Sind and Balūchistān, since the data at present available are altogether too meagre for their solution.[1] Whatever be the date of the Nāl ware,[2] one thing seems certain, viz. that it has no logical place among the other wares of that region and could neither have led up to nor resulted from them. I do not mean by this to imply that it was an imported ware ; it is found in such quantities that it must certainly have been manufactured on the spot ; but it looks as if the potters who first produced it could hardly have been native to Eastern Balūchistān, but had migrated there from the Persian side, where it may be hoped that the missing links between this and the Susa I ware will some day be found.

Nāl ware intrusive in Eastern Balūchistān.

Evidence of other antiquities of Nāl.

The conclusion drawn above from the pottery, that the Nāl culture is intrusive from the west and distinct from the Indus culture, is borne out generally by the other antiquities from Nāl. Thus, both the peculiar type of " Indus " chisel and the short blade-axe which is found in the Indus and Ganges basins, are absent from Nāl. Secondly, the long blade-axe of Nāl differs from the long blade-axe of the Indus in that it tapers more towards the butt. Thirdly, the straight-edged Nāl saw is quite different from the curvilinear Indus saw, which closely resembles the early Egyptian types. Fourthly, none of the Indus leaf-shaped spear-heads and daggers have been found at Nāl ; nor does bronze occur there, though bronze is common in the Indus Valley and also on sites in Balūchistān which evidence a connection with the Indus sphere of culture. On the other side of the scale, it is true, we have to set the presence at Nāl of long and short biconical beads and of a large weight, similar in shape to those found at Mohenjo-daro and Harappā. The former, however, have no special significance, for the reason that they are found on the Persian no less than on the Indian side ; and, so far as the weight is concerned, it is likely enough that for commercial reasons

[1] Since the above was written Mr N. G. Majumdar has discovered at Amri and other sites in Lower Sind clear evidence of two distinct periods of occupation, the upper and later represented by the characteristic red-and-black Indus pottery, the lower and earlier by pale and polychrome wares closely akin to those from Mehī and from Nāl. Possibly we may find that the paler wares antedated the black-and-red pottery throughout the Indus country, and that the latter was introduced into Sind either from the Panjāb or from still further east. Mr. Majumdar's discovery, however, does not necessarily imply that this was so ; for there is no question that the two classes of wares—the red-and-black on the one hand, the buff on the other—were contemporary with one another over a long protracted period, and it is obvious that, if there was a temporary intrusion of western buff wares into the red-and-black sphere, the former might be found either above or below the latter. The stratification at Amri and elsewhere undoubtedly suggests that the Indus culture succeeded an earlier and different culture in Lower Sind, but it would be wise not to draw from it any hasty conclusions.

[2] For my own part, I still incline to adhere to the opinion which I expressed some years ago, that the remains at Nāl are earlier than any yet exposed at Mohenjo-daro or Harappā.

the two countries may have found it convenient to adopt a similar system of weights and measures, whatever the racial or cultural differences between them may have been.

Evidence of pottery summed up.

I hope there is no need for me to apologize for devoting so much space to these Balūchī wares. I have done so because they are our chief guide in estimating the extent of the influence exerted by the Indus culture in Balūchistān. It is evident from them that that culture must have predominated at one time over the eastern districts of Balūchistān,[1] Southern Wazīristān and the Derajāt west of the Indus, and that it was an active force, moreover, in Kolwa and the Kej Valley. But it is also evident that in Western Balūchistān and Sīstān there was a rival culture distinguished by an essentially different class of wares which found its way into Balūchistān from the Persian side and encroached at one time or another as far east as Southern Sind. To this rival culture from the west belongs the remarkable Nāl pottery from the Nūndara district and Nāl in Jhalāwān, which may have either preceded or followed the red-and-black wares in that part of Balūchistān.

Corroborated by other antiquities.

Figurines of the Mother Goddess and humped bulls.

This evidence from the pottery is also borne out by certain other antiquities of Balūchistān, notably by the terra-cotta figurines of humped bulls and of the Mother Goddess, both of which seem to have been intimately connected with the pre-Āryan religion of India and more likely to have derived from the East than from the West, though, as I have shown in Chapter V, the cult of the Mother Goddess was also found in Western Asia. Now, the sites which have yielded these terra-cottas are those which have also yielded the red-and-black, polychrome-banded, and Mehī varieties of pottery, viz. Periāno-Ghuṇḍai, Mughal-Ghuṇḍai, Kaudanī, Dabar-kot, Sūr-jangal, Mehī, and Kulli in the case of the Mother Goddess figurines ; and Periāno-Ghuṇḍai, Mehī, Men-damb, Kulli, and Shāhī-tump in the case of the humped bulls.[2] In other words, these two particular classes of objects are found on sites which their ceramic wares connect more or less closely with the Indus zone of culture, whereas, according to Sir Aurel Stein, neither of them is found in association with Nāl ware, which there are good reasons for associating with the Persian zone.[3]

[1] Las Bela has not yet been explored and is not therefore included in this statement.

[2] It should be added that the humped bull is also freely delineated on the Mehī pottery and on the red-and-black ware of Sūr-jangal, but occurs also occasionally on the Nāl pottery which shared some of its motifs with the Mehī ware.

[3] Sir Aurel Stein is specific on this point. As to the bull figurines found by Mr. Hargreaves in Areas A, D, E, and F at Nāl, it is to be noted that the remains with which the bulls were associated in two of these areas (D and F) appeared to be of a different age from the graves which yielded the Nāl ware ; as to the other two areas, it is not clear from Mr. Hargreaves' report in which particular stratum they were found, but there is no mention of any bull figurine having been found in any of the graves.

Chapter VIII

THE AGE AND AUTHORS OF THE INDUS CIVILIZATION

Resemblance of Indus culture to Second Prediluvian culture of Elam and Mesopotamia and to the protohistoric culture of Sumer. Common features of a general order.

ANYONE familiar with the prehistoric archæology of Western Asia will perceive at once that the culture described in Chapters III and IV is of the Chalcolithic Age and that in many features, both general and particular, it bears a close resemblance both to what Professor Childe has called the "Second Prediluvian Culture" of Elam and Mesopotamia, and to the proto-historic culture of Sumer. Among the features of a general order may be mentioned the following: The organization of society in cities; the continued but sparing use of stone side by side with copper or bronze for the manufacture of weapons, tools, and vessels; the invention of the potter's wheel and the production with its help of improved kinds of pottery; the invention of wheeled vehicles to take the place of the older sleds; the construction of buildings with kiln-burnt and sun-dried bricks and their elevation on platforms, in order to place them beyond the reach of floods; the use of picture signs for writing; the use of maces of stone or metal along with spears, daggers, bows, and arrows as weapons of offence; the fashioning of ornaments out of faience and shell and various kinds of stone, including amazonite; the development to a high pitch of the minor arts and crafts, particularly those of the goldsmith and silversmith. These are but some of the many features common to the chief river cultures of South-Western Asia in this period. Taken individually, their evidence would not be conclusive, but considered cumulatively they leave no room for doubt that the Indus culture was contemporary with the early culture of Sumer and with the Later Prediluvian culture of Elam and Mesopotamia. If, however, further proof be required, it is to be found in a variety of objects recovered from the Indus, Elamite, and Mesopotamian sites, which show that a lively intercourse must have been going on between these countries at the close of the fourth millennium B.C., when Mohenjo-daro and Harappā were at the height of their prosperity.

Period of time covered by settlements at Mohenjo-daro and Harappā.

But before we discuss this additional evidence, it may be well to say something about the period of time covered by the several successive settlements at these two sites. At Mohenjo-daro we have brought to light seven layers of buildings, viz. three of the Late Period, three of the Intermediate, and one of the Early; and it may be regarded as virtually certain that still earlier layers lie submerged beneath the sub-soil water. Now, in normal conditions we should be safe in affirming, on the analogy of other well-known sites, such as Troy, Knossos, Athens, or Rome, that a city rebuilt as often as Mohenjo-daro must have had a history of at least a thousand years. But at Mohenjo-daro conditions are not normal; for, as already explained, the city was in perpetual danger of inundation, and there is abundant evidence to prove that much of the ruin observable here is directly attributable to this cause. It is not unreasonable, therefore, to infer that the process of decay and revival may have been much

more rapid here than it would have been in ordinary conditions elsewhere ; and this inference is strikingly corroborated by the surprisingly uniform character of its antiquities. Thus, the same sizes of bricks are used indiscriminately in all levels and afford no criterion as to the age of any given structure ; and the only outstanding difference between the buildings of the seven levels hitherto laid bare, is that those of the uppermost levels comprised in the Late Period are meaner and more poorly built than their predecessors. Again, the seals from the different levels are so alike in style, material, form, and technique that it is impracticable to distinguish between them ; and the same is true of the pottery, the bulk of which defies all efforts to arrange it in typological sequence. Uniformity such as this would not have been possible, had the period of Mohenjo-daro's occupation been a long one. For this occupation we have provisionally allowed a space of 500 years, that is, two generations apiece for each of the successive strata brought to light, without counting those that are still submerged.[1] This short period of 500 years must not, of course, be supposed to cover the whole rise and fall of the Indus civilization. At the moment when this civilization reveals itself to us, it is already fully fledged, and we are bound therefore to postulate for it a long period of antecedent evolution. The complexity of its city life, the elaborate nature of its buildings, and the excellence of its arts and crafts can only have resulted from long centuries of previous endeavour. Consider, for example, the pottery with its manifold shapes and the long development through which it must have passed before reaching the stage in which we find it. Or consider the beauty of some of the seals and the generations of effort that must have been expended in bringing the art of the engraver to such a pitch ; or consider, again, the conventionalized and monumental forms of many of the signs of the Indus script and the long, protracted process by which they must have been evolved from the simpler pictographs in which they originated. Possibly some of the arts and crafts may have been imported in a more or less advanced state from abroad, and in their case it is not necessary to assume a long period of development on Indian soil, but, taken as a whole, it is manifest that the Indus civilization must have been evolved on the banks of the river for long ages before it comes within our ken. How long, one can only surmise, but it is safe to say that a thousand years would have been all too few for such a result.

Uniform character of antiquities.

500 years provisionally allowed for occupation of Mohenjo-daro, but Indus civilization already fully fledged at outset.

And if we have to take into our calculations this period of antecedent growth, we must also allow for the probability of this civilization having survived long after Mohenjo-daro had disappeared from the scene. In one part of the excavations at Harappā a level has been reached which is believed to be earlier than any yet disclosed at Mohenjo-daro, and on the same site also certain burials and other relics have come to light which are certainly posterior to anything found at Mohenjo-daro, though whether they represent a direct continuation of the Indus culture or some foreign culture imported from outside, still remains to be determined.

And probably survived long after the disappearance of Mohenjo-daro.

To revert, however, to the intercourse between the Indus Valley, Mesopotamia, and Elam—of the individual objects which afford proof of commercial or other relations between these countries and help therefore to determine the age of the Indus civilization, the most important are five seals of characteristic "Indus" pattern discovered on different sites in Elam and Mesopotamia, which in two cases at least must be definitely assigned to the Pre-Sargonic Period and in no case can be referred to a later date than the third millennium B.C. Particulars of these seals and their find-spots are given by Mr. Gadd and Professor Langdon in Chapters XXII and XXIII and need not be repeated here. From the two specimens found at Ur and Kish it has rightly been inferred that the Indus civilization must go back

Individual objects which afford proof of intercourse between Indus Valley, Mesopotamia and Elam. Seals.

[1] This period of 500 years is probably too long rather than too short. At Taxila, the six superimposed cities in Sirkap rose and fell within a space of 300 years (200 B.C.-A.D. 100)

to an age before 2800 B.C. This is incontestable. *But we need not, therefore, conclude* that the civilization ceased to exist after that date. The seals unearthed at Mohenjo-daro emanate from all levels and in point of style are indistinguishable from one another. The specimens, therefore, found at Ur and Kish might equally well have been produced in the Late, Intermediate, or Early Period. Nay, it is possible that these particular specimens may have belonged to some period of the Indus civilization which is not represented either at Mohenjo-daro or Harappā—a period, that is to say, either subsequent to the latest settlements on these sites or anterior to the earliest ones, since it can hardly be supposed that the period during which seals of this class were turned out coincided exactly with the occupation of these cities, and that no similar seals were produced either before or after that occupation. Inasmuch, however, as there is at present no way of determining this point, we have assumed provisionally that the Ur and Kish seals belong to the Intermediate Period, and we have suggested accordingly that the occupation of Mohenjo-daro fell approximately between 3250 and 2750 B.C.

Bone cylinder seal of Susa II period.

In regard to one of the five seals referred to above, viz. a bone cylinder seal of the "bull and manger" type, which was found in association with some Proto-Elamite tablets in a deposit of the Susa II Period and referred by Dr. Scheil to about the time of Sargon of Agade,[1] it is noteworthy that the design and technique are unusually crude as compared with the ordinary type of Indus seal, and Professor Langdon concludes from this that the seal in question was more archaic than the generality of its fellows. If Professor Langdon is right and if Dr. Scheil's dating of the seal is correct, the other and later seals would necessarily have to be referred to the Post-Sargonic Period. From its style and cylindrical form, however, which is Mesopotamian or proto-Elamite and not Indian, it seems more likely that this seal was engraved—possibly for an Indian settler—by a local Elamite craftsman, whose lack of skill would sufficiently account for the apparent degeneracy of the carving. Professor Langdon also takes the view that the script on the Indus seal is closely related to archaic Sumerian, as it appears in the earliest phase known to us at Jemdet Nasr, Nippur, and Kish, his arguments being that the two scripts had many signs in common, that they employed numerical ideographs as syllables, and that both read from right to left. Granted, however, that this close connection with archaic Sumerian existed, it does not, unfortunately, carry us any further in our present inquiry, since the supposed resemblances between them are likely to have been due, not so much to borrowings by one country from the other during the age with which we are dealing as to their ultimate derivation from some common source centuries before they were crystallized into the form in which they have reached us.

Other objects and motifs.

Among the many other objects and motifs that demonstrate an intimate relation between the Indus, Early Sumerian, and Second Prediluvian cultures, the following are specially noteworthy : (1) Certain fragments of vases found at Al-'Ubaid, which are made of an Indian potstone[2] ; (2) the trefoil patterning on the robe of the statuette figured in Pl. XCVIII, which is identical with that on certain Sumerian "Bulls of Heaven" of early date[3] ; (3) the horned figures on Seals 356 and 357, which there is a strong presumption for connecting, if not for identifying, with the Sumerian Hero-God Eabani ; (4) a toilet-set comprising a piercer, earscoop, and tweezers, found in a deposit of the Late Period at Harappā[4] and identical in pattern with one from the First Dynasty cemetery at Ur[5] ; (5) the curious etched beads of carnelian figured in Pl. CXLVI, 43–5, which are identical in technique with certain

[1] See *infra*, p. 424.

[2] Cf. Hall and Woolley, *Al 'Ubaid*, p. 42, and Gordon Childe, *The Most Ancient East*, p. 200.

[3] For references, see *infra*, p. 356, note 2.

[4] *ASR.* 1923–24, pl. xix, 22.

[5] *Ant. Journ* viii (1928), pp. 1 ff, and Gordon Childe, *The Most Ancient East*, pl xix, *b*, and p. 189.

beads from pre-Sargonic graves at Kish[1]; (6) a peculiar type of jar cover figured in Pl. LXXXII, Type X, specimens of which have also been found at Jemdet Nasr; (7) the wavy rings of shell inlay figured in Pl. CLVI, 4 and 5; the squat carinated vessel of Pl. LXXXI, 17; the offering's stands of Pl. LXXIX; the barrel-shaped stone weights of Pl. CLIV, 5 and 7; the stone toilet boxes of Pl. CXXXI, 36 and 37, all of which, as Mr. Mackay has pointed out, can be matched by similar objects from Mesopotamia of the fourth or first half of the third millennium B.C.[2] These examples—and their number might easily be multiplied—are enough to show that active intercourse must have been going on between the Indus Valley and Mesopotamia in pre-Sargonic or early Sargonic times, and thus afford strong confirmation of the chronological conclusions drawn from the seals.

Possible objections to proposed chronology. The "comb" and "step" motifs.

The proposed chronology is not, however, wholly free from difficulties, since there are certain features of our Indus antiquities which seem to point to an earlier date than the one suggested, while there are others which seem to point to a later. Among the former is the peculiar "comb" motif illustrated in Plate XCI and XCII. This motif is found on the Indus red-and-black pottery and also Susa I pottery, but according to Mr. Mackay, does not occur in the Musyān, Susa II, or Jemdet Nasr pottery, and, inasmuch as it is altogether too distinctive and unusual a device to have originated independently in different localities, we must suppose, provisionally at any rate, that it was borrowed by the Indus potters from those of Persia. Granted, however, that our chronology is correct, we are then confronted with the difficulty of explaining how this motif disappeared altogether from use in Western Persia after the First Prediluvian culture to reappear again on the Indus a thousand years or thereabouts later. A similar problem is presented by the "step" pattern, which is also characteristic of the Susa I pottery, and reappears again in the shell-inlay work of the Indus Valley (Plate CLV, 33), but is absent from the Second Prediluvian culture. The explanation of this phenomenon may be that the cultures of the Indus Valley, Balūchistān, and Persia had been closely related and mutually influenced by one another during the First Prediluvian Period, and that this influence was kept alive in the more eastern countries after it had been eclipsed in Persia itself. To this hypothesis some colour is given by the fact that the "comb" motif survives on the local Mehī ware of Balūchistān (where it is found in juxtaposition with motifs closely paralleled in the Second Prediluvian pottery) as well as on the Indus ware, while the "step" motif is one of the most characteristic traits of Nāl ware.

Exceptionally primitive character of copper and bronze weapons and implements.

Another possible difficulty in the way of the proposed chronology is suggested by the very primitive character of some of the copper and bronze weapons and implements from Mohenjo-daro and Harappā. Thus, the flimsy leaf-shaped spear-heads and daggers are such as, judging by Mesopotamian parallels, we should hardly expect to find in use at so late a date. For in Sumer much superior types of socketted spear-heads and daggers with strengthening mid-ribs had been evolved well before 3000 B.C.,[3] while most of our examples from Mohenjo-daro and Harappā appertain to the Late Period of occupation—that is according to our proposed chronology, to the opening centuries of the third millennium B.C. The blade-axes, again, of Type 1 (Plates CXXXVIII–CXXXIX) are paralleled, as Mr. Mackay points out,[4] by early examples from the Susa I culture; while the bronze saw with curved cutting edge illustrated in Plate CXXXVII, No. 7, has its closest analogues among the most primitive saws of Egypt. That these

[1] See *infra*, pp. 515–16.

[2] While evidencing intimate intercourse between the countries concerned, objects such as these do not of course imply identity of culture. For every example in which a connection can be traced a dozen might be cited to prove that no such connection existed.

[3] Cf. p. 498 *infra*. [4] Cf. p. 495 *infra*.

implements and weapons, however, are in reality less ancient than their form might lead us to suppose, is, I think, proved by the fact that at the time they were fabricated, the artificers of the Indus Valley were thoroughly familiar with bronze and capable of turning out elaborate and highly finished vessels and statuettes in that metal as well as in copper; and it is further proved by the discovery of a fine example of a socketted axe-adze which Mr. Mackay unearthed at Mohenjo-daro in 1927–8 in a deposit of the Late Period. Possibly this axe-adze was a foreign importation, but whether it was so or not, there is no doubt that at the time it was manufactured metal-workers somewhere or other had reached the point of producing a far superior type of implement to the one commonly in use in the Indus Valley.

Mohenjo-daro antiquities probably not earlier than 3250 B.C.

So far, then, as Mohenjo-daro is concerned, there appears to be no sufficient reason for pushing back the *terminus a quo* of its antiquities earlier than 3250 B.C. At the same time it is evident—and I should like to stress this point once again—that the culture represented must have had a long antecedent history on the soil of India, taking us back to an age that at present can only be dimly surmised.

No light on chronology afforded by domestic architecture at Mohenjo-daro.

It now remains to be considered whether the *terminus ad quem* of the Mohenjo-daro antiquities should be brought down lower than about 2750 B.C. An argument that I anticipate may be brought forward in favour of a later limit concerns the surprisingly developed character of the domestic architecture of Mohenjo-daro, demonstrating a social condition of the people far in advance of what might be expected at the close of the fourth millennium B.C. Here, we are without light from other countries. The little group of houses unearthed by Mr. Woolley at Ur, which are the only ones known to us at all resembling those of Mohenjo-daro, are ascribed by him to the time of the Third Dynasty of Ur (2278–2170 B.C.) and of the succeeding Dynasties of Isin and Larsa, but, though the resemblance is undeniable, it is with the poorly built houses of the Latest Indus Period, not with the finer structures of the Intermediate and Early Periods that the Ur examples are to be compared; and, while it may be admitted that these houses at Ur probably owed their origin to imitation from Indian prototypes, there is no need to assume either that they were the first of their kind to be built in Sumer or that the Mohenjo-daro examples, on the other hand, were the last of their kind to be built in the Indus Valley. The probability is that houses of this class persisted in the Indus Valley long after the disappearance of Mohenjo-daro, and their influence may have permeated to Mesopotamia at any time during the third millennium B.C. But, even if the late buildings of Mohenjo-daro prove to be less ancient by some centuries than we suppose, we should still be bound on the evidence of the seals to refer the better types of these buildings appertaining to the Intermediate and Early Periods to the Pre-Sargonic age, and to admit accordingly that Indian domestic architecture was so far ahead of that of other countries that it can hardly be used as a criterion of age.

Nor by copper and bronze weapons and implements from Gangetic basin and Central Provinces.

Nor is any help in this matter of chronology obtainable from the groups of copper and bronze weapons and implements found at Gungeria in the Central Provinces and various sites in the Jumna-Ganges basin, notably at Rājpur (in the Bijnor District), Mainpuri, Niorai (in the Etāwah District), Fathgarh, and Bithūr (in the Cawnpore District). The objects referred to, which evidently belong to one period, comprise short, flat celts of several types, long bar celts, chisels, barbed harpoon heads and swords, besides a number of silver plates (from Gungeria only), some of the last mentioned being in the form of conventionalized bulls' heads, others of circular discs. Some of the short celts with splayed crescentic cutting-edge are not unlike certain specimens from Mohenjo-daro and Harappā, but the type is too common and widely diffused for any conclusions to be drawn from it. On the other hand, most of the other objects, viz. the long bar celts, swords, and barbed harpoon-heads are quite

peculiar to the Jumna-Ganges basin and different from anything known to us either from the Indus Valley or anywhere else. Possibly these objects give us our first glimpse of Indo-Āryan culture in the upper Gangetic Valley, but it may be that they represent some culture yet unknown to us of Dravidian or Proto-Australoid origin and distinct alike from both the Indus and the later Indo-Āryan cultures. Whatever their origin, the presence among them of swords with developed mid-ribs—weapons which are entirely absent at Mohenjo-daro and Harappā—leaves no doubt that they belong to a later age than that represented on the latter sites, and, inasmuch as all these objects appertain to the Copper and Bronze Age, it seems fairly safe to infer that a considerable period of time must have elapsed between the disappearance of Mohenjo-daro and Harappā and the beginning of the Iron Age.

* * * * * *

The authors of the Indus civilization.

From the date of the Indus culture we turn to the question of its authors. Were they indigenous or were they immigrant in the Indus Valley, and, if the latter, from what direction did they come? Various theories on the subject have already been launched. Some writers have jumped hastily to the conclusion that they were Vedic-Āryans, and have sought to use the highly developed Indus culture to prove the great antiquity of the Āryan domination of India.[1] Others, again, have endeavoured to identify the Indus people with the Sumerians, or at least to find between them an ethnic connection which might account for the common elements in their respective cultures.[2] Let it be said at once that no evidence, anthropological or other, has yet been found to support either of these contentions.

Human remains at Mohenjo-daro comprise four ethnic types.

Of the human remains found at Mohenjo-daro I have already given some account in Chapter VI, with special reference to the circumstances in which they were buried, and I have shown there that, with one exception, all the skeletons probably belong to the Chalcolithic (Late I or II) Period and that there is no reason whatever for regarding them as other than representative of the city's population. From the anthropological point of view these remains are fully discussed by Colonel Sewell and Dr. Guha in Chapter XXX. They comprise, in all, twenty-four skeletons or portions of skeletons referable to the Chalcolithic Age. Among them Colonel Sewell and Dr. Guha identify four distinct ethnic types, viz. the Proto-Australoid, Mediterranean, Mongolian branch of the Alpine stock, and the Alpine. The first of these types is represented by three markedly dolichocranial skulls (2.11 and M), which show a close affinity, on the one hand, with certain skulls from Kish, Al 'Ubaid, and Ur in Mesopotamia and, on the other, with skulls from the ancient cemetery at Ādittanallur in the Madras Presidency as well as with characteristic skulls of the Veddahs of Ceylon. The second or Mediterranean type of skull, which is represented by six specimens (Nos. 6, 7, 9, 10, 19, and 26), is also dolichocranial but exhibits much less brain capacity than the Proto-Australoid. To this type Colonel Sewell and Dr. Guha also refer the Nāl skull,[3] another from Kish (No. 4), two from Anau (Nos. 1 and 2), and the Sialkot and Bayāna skulls. Of the third or Mongolian branch of the Alpine stock there is only one example, viz. the mesaticranial skull (No. 3) which Colonel Sewell and Dr. Guha consider to be typically Mongolian and with which they compare a characteristic Nāga skull in the Calcutta collection. Of the fourth or Alpine type there is also only one specimen, namely, the skull of a child (No. 14), but though this is the only one which is unquestionably brachycranial, Colonel Sewell and Dr. Guha consider it probable that three other specimens

[1] One Indian writer has sought to find in this civilization confirmation of his theory that the Āryans emanated from India itself, and had already reached the Iron Age while the Valley of the Indus was still submerged beneath the sea! Such fantastic theories refute themselves and do not claim serious consideration.

[2] Cf. Gordon Childe, *The Aryans*, p. 35.   [3] Cf. p. 643 *infra*.

(Nos. 8, 13, and 20) may belong to the same Alpine group, one of these (No. 13) being the skull of a woman who, they suggest, may have been the mother of the child (No. 14).

Cosmopolitan character of population.

The conclusions reached by Colonel Sewell and Dr. Guha accord well with what we might naturally expect to find on this site. For, placed as Sind is on the western fringe of India, with easy land and sea communications along the southern coasts of Western Asia, and with the great mountain zone all but overshadowing it on the north, it can hardly have failed, even at this early age, to have been the meeting ground, as Mesopotamia also was, of widely divergent types of humanity—of Proto-Australoids from the Indian sub-continent, of Mediterraneans from along the southern shores of Asia, and of Alpines and Mongoloid-Alpines whose habitat was in the mountain zones respectively of Western and Eastern Asia.

Craniological evidence borne out by sculptures.

And this craniological evidence as to the mingling of diverse racial types at Mohenjo-daro finds some measure of confirmation in the sculptured heads and figures unearthed on the site, one of which (*Pl.* XCVIII) appears to be mesaticranial, two (Pls. XCIX, 1–3, and C, 4–6) brachycranial, and one (Pl. XCIX, 7–10) dolichocranial, while the bronze statuette figured in Pl. XCIV, 6–8, vividly calls to mind a Proto-Australoid type still common in the jungles of Central India.

But evidence of both sculptures and skulls must be accepted with reserve.

We should do well, however, not to attach overmuch weight at present to any of this evidence. So far as the sculptures are concerned, the artists were not anthropologists, and are hardly likely to have paid much attention to the shapes of the heads or to have given us very truthful transcripts of the originals. On the other hand, the skulls are far too few in number to warrant any conclusions being drawn from them as to the composition of the civic population.

Human remains at Harappā.

The same remark applies also to the skulls from Harappā; for, though the human remains at that site are proving more plentiful than at Mohenjo-daro, only three skulls have so far been examined and measured by Colonel Sewell and Dr. Guha. Two of these (Nos. 5440 *C* and *D*) come from the fractional burial in Mound AB, which is referable to the Late III Period or thereabouts[1]; the other (No. 7435 *B*) is from one of the jar-burials (also fractional) in Cemetery H, which are posterior to the Indus period as represented at Mohenjo-daro.[2] The two former are of an adult male and female, and are said to be unmistakably brachycephalic, with comparatively high-pitched nose. In Colonel Sewell's opinion they correspond with the brachycephalic type from Kish, and belong to the Alpine race—possibly to the Armenoid subdivision of it. The other skull is "mesaticephalic, with low cranial vault, medium nose and orbits, and marked alveolar prognathism; the frontal portion is well developed but rather sloping and the supra-orbital ridges moderate".[3] It is said to be quite distinct in type from any of the other skulls (whether long-headed or broad-headed) found at Mohenjo-daro or Harappā, and is regarded by Colonel Sewell and Dr Guha as pointing to the presence of a different race at the latter site. This view of Colonel Sewell's and Dr. Guha's is specially interesting, as it fits in with what the strange mode of jar-burial at Harappā and the peculiar decoration of the jars themselves would naturally lead us to infer, viz. that after the eclipse of the Indus civilization, some new race of people must have established itself here. Obviously, however, many more skulls from the same cemetery will have to be examined before this tentative inference can be confirmed.

So far, then, as our limited skeletal material is concerned, the only conclusion that can be drawn from it is that during the Late Period the population of Mohenjo-daro included at least the four racial types enumerated above; but which, if any, of the four was indigenous in the Indus Valley and which, if any, was the prime author of the Indus civilization, are questions that yet await solution. It may be, nay it is more than likely, that this civilization was the offspring, not of any one race in particular, but of several—born, perhaps,

[1] Cf. Chap. VI, p. 84 [2] *Ibid.*, p. 84. [3] *Extract from a note by Dr. B. S. Guha.*

rather of the soil itself and of the rivers than of the varied breeds of men which they sustained. For, as far back as its history can be traced, the population of Sind and the Panjāb has been a blend of many diverse elements, and there is no reason for assuming that it was other than heterogeneous in the earlier age with which we are now concerned.

The Indus people: Dravidians and Sumerians.

To return to the supposed connection between the Indus people and the Sumerians—it may be recalled that, before anything whatever had been discovered of the Indus civilization, Dr. H. R. Hall proposed to locate the homeland of the Sumerians somewhere to the east of Mesopotamia, and suggested that they might belong to the same ethnic type as the Dravidians of India, who, though now restricted to the South of India, are believed on linguistic and ethnological grounds to have once populated virtually the whole of the peninsula, including the Panjāb, Sind, and Balūchistān, where, as is well known, the Dravidian speech is still preserved in the language of the Brāhūīs. **Brāhūīs.** Following on the discoveries at Mohenjo-daro and Harappā which revealed various points of resemblance between the material cultures of these places and of Sumer, it was natural that a fresh impetus should be given to this theory and that the resemblances referred to should be interpreted as additional proof of its correctness. Pending, however, the discovery of further evidence, it is well that we should realize on what a very insecure basis this theory really rests. What, in effect, is the supposed similarity of type between these two races—the Sumerian and the Dravidian—which is coming to be accepted as an established fact? **Sumerian type.** Sir Arthur Keith says that the people who spoke Sumerian were dolichocephalic, with large brain capacity, like a certain section of the pre-dynastic Egyptians and like the present-day Mesopotamians. "They had," he writes, "big, long, and narrow heads; their affinities were with the peoples of the Caucasian or European type, and we may regard South-western Asia as their cradle-land until evidence leading to a different conclusion comes to light." Mr. Woolley also states that, judging by their physical type, the Sumerians "were of the Indo-European stock, in appearance not unlike the modern Arab".[1] On the other hand, Professor Langdon holds the view that the dolichocephalic skulls found at Kish were Semitic and the brachycephalic ones Sumerian.[2] If, however, we are uncertain about the physical type of the Sumerians, we are just as uncertain about that of the ancient Dravidians, for the very good reason that we possess no remains whatever that can be identified with them. **Dravidian type.** The modern Dravidian stock is officially described as being "of short stature, complexion very dark, approaching black; hair plentiful, with an occasional tendency to curl; eyes dark, head long, nose very broad, sometimes depressed at the root but not so as to make the face appear flat". It would be absurd to assume that this represents the Dravidian type of 5,000 years ago. In the case of the Brāhūī-speaking people of Balūchistān we know that, though they have preserved the Dravidic speech of their ancestors, they have entirely failed to preserve their racial character, which thanks to continuous recruitment from without has now become mainly Iranian[3]; and we know, also, that the Dravidian type in the south of the peninsula has been largely transformed by the free admixture of aboriginal, i.e. Proto-Australoid, blood as well perhaps as of other elements. So shadowy, indeed, is the distinction between the Dravidians and many of the aboriginals, that in the case of the Mundā-speaking people most authorities incline to doubt if any distinction at all

[1] Cf. Sir Arthur Keith in Hall and Woolley, *Al 'Ubaid*, vol. i, pp. 216–40, and Woolley, *The Sumerians*, p 6

[2] Langdon, *Kish*, pp. 59–64; G. A Barton in *JAOS*. Sept., 1929, pp 263 ff I am given to understand, however, that Professor Langdon's view is not shared by Mr. Dudley Buxton. From the earliest times the population of Kish, like that of Mohenjo daro, appears to have been a thoroughly mixed one, the racial types represented there being the dolichocephalic Eurafrican and Mediterranean, and the brachycephalic Armenoid.

[3] Cf. *CHI*. p 42

can be drawn. Any attempt, therefore, to equate the Sumerians with the ancient Dravidians is complicated at the outset by the difficulty of defining either the Sumerian or the Dravidian type.[1] If, as most authorities on the subject maintain, the Dravidians came out of the west and entered India as invaders, we might suppose that they were originally related to the Mediterraneans who are represented at Kish, Anau, Nāl, and Mohenjo-daro (where the largest proportion of skulls belong to this type), and that the type was subsequently transformed in India itself by intermarriage with proto-Australoids and others. If, however, they were indigenous, as others hold, in India, we must suppose that they were proto-Australoid in origin and developed their Dravidian character by intermingling with foreign elements and by processes of natural evolution. But, in whatever direction they may have moved, whether from east to west or west to east, it would obviously be very rash in the present uncertain state of our knowledge to endeavour to identify as "Dravidian" either the skulls classed by Colonel Sewell as Proto-Australoid (Nos. 2, 11 and M) or those classed as Mediterranean (Nos. 6, 7, 9, 10, 19, and 26); rasher still to identify any of these skulls as "Sumerian".

Vedic Āryans.

It remains, finally, to consider if there are any grounds for identifying the authors of the Indus civilization with the Indo-Āryans of Vedic literature. Here, again, the ethnological aspect of the problem is beset with difficulties. The Indo-Āryan type of Northern India is described by ethnologists as "generally tall of stature, with fair complexion, dark eyes, plentiful hair on face, long head, narrow and prominent but not specially long nose". This type would accord well enough with what the Vedas tell us of the Indo-Āryans, whose features and fair complexion were not infrequently contrasted with those of the dark-skinned, noseless Dasyus, and in the case of the Indo-Āryans it is a plausible supposition that the exclusiveness of their caste system tended to keep their stock more than usually pure. Even so, however, we cannot be sure that their type has not been greatly modified in the course of the centuries, nor can we, without more precise data in the shape of contemporary human remains, determine to what race or races they were physically related. It is still debatable whether they were blonde Nordics, or brunette Mediterraneans or broad-headed Alpines (though this is hardly likely) or perhaps a mixture of all three. But, although for this reason the human remains at Mohenjo-daro afford no help in this question, a comparison of the Indus and Vedic cultures shows incontestably that they were unrelated.

Indus and Vedic cultures contrasted.

Thus, the picture of Indo-Āryan society portrayed in the Vedas is that of a partly pastoral, partly agricultural people, who have not yet emerged from the village state, who have no knowledge of life in cities or of the complex economic organization which such life implies, and whose houses are nondescript affairs constructed largely of bamboo. At Mohenjo-daro and Harappā, on the other hand, we have densely populated cities with solid, commodious houses of brick equipped with adequate sanitation, bathrooms, wells, and other amenities. The metals which the Indo-Āryans used in the time of the Rigveda are gold and copper or bronze; but a little later, in the time of the Yajurveda and Atharvaveda, these metals are supplemented by silver and iron. Among the Indus people silver is commoner than gold, and utensils and vessels are sometimes made of stone—a relic of the Neolithic Age—as well as of copper and bronze. Of iron there is no vestige. For offensive weapons the Vedic-Āryans have the bow and arrow, spear, dagger, and axe, and for defensive armour the helmet and coat of mail. The Indus people also have the bow and arrow, spear, dagger, and axe, but, like the Mesopotamians and Egyptians, they have the mace as well, sometimes of stone, sometimes of metal; while,

[1] In the *Cambridge History of India*, vol. i, the similarity of the Sumerian and Dravidian ethnic types is said to be "undoubted". Yet on p. 85 we read with reference to the epithet *anāsah* that it is a clear indication that the aborigines to which it is applied were of the Dravidian type, as we know it at the present day. From this it might easily be inferred that the Sumerians also were flat-nosed. Could any inference be further from the truth?

on the other hand, defensive armour is quite unknown to them—a fact which must have told against them in any contests with mailed and helmeted foes. The Vedic-Āryans are a nation of meat-eaters, who appear to have had a general aversion to fish, since there is no direct mention of fishing in the Vedas. With the Indus people fish is a common article of diet, and so, too, are molluscs, turtles, and other aquatic creatures.[1] In the lives of the Vedic-Āryans the horse plays an important part, as it did in the lives of many nations from the northern grasslands. To the people of Mohenjo-daro and Harappā the horse seems to have been unknown ; it has no place, at any rate, among the many animals figured at these places, and, though some bones of a horse (*Equus caballus*) were found on the surface at the former site, it is more than probable that they belonged to a later, maybe quite modern, period. By the Vedic-Āryans the cow is prized above all other animals and regarded with special veneration. Among the Indus people the cow is of no particular account, its place with them being taken by the bull, the popularity of whose cult is attested by the numerous figurines and other representations of this animal. Of the tiger there is no mention in the Vedas, and of the elephant but little, but both these animals are familiar to the Indus people. The Vedic religion is normally aniconic. At Mohenjo-daro and Harappā iconism is everywhere apparent. In the Vedic pantheon the female element is almost wholly subordinate to the male, and neither the Mother Goddess nor Śiva (with whom, however, the Vedic Rudra was afterwards to be identified) has any place among its members. Among the Indus cults those of the Mother Goddess and Śiva are prominent, and the female elements appear to be co-equal with, if not to predominate over, the male. Fire (Agni) ranks among the foremost deities of the Veda, and the domestic hearth or firepit (*agni-kunda*) is a characteristic feature of every house. In the houses of Mohenjo-daro the firepit is conspicuously lacking.[2] To the Indo-Āryan phallic worship was abhorrent. Among the Indus people there is abundant evidence of its existence.

Vedic and Indus civilizations unrelated.

As times goes on, doubtless many other salient points of difference will be revealed, but for the moment the above will suffice to demonstrate how wide is the gulf between the Indus and Vedic civilizations. Now it may, perhaps, be argued that the difference between them is a difference of time only ; that the Vedic civilization was either the progenitor or the lineal descendant of the Indus civilization. Neither hypothesis, I fear, is tenable. Let us assume, in the first place, that the Vedic civilization preceded and led up to the Indus civilization. On this hypothesis the progress from the village to the city state and from the nondescript houses of the Vedic period to the massive brick architecture of Mohenjo-daro and Harappā would find a logical explanation, though we should have to postulate a long interval of time in order to account for the evolution. But what about other cultural features ? If the Vedic culture antedated the Indus, how comes it that iron and defensive armour and the horse, which are characteristic of the former, are unknown to the latter ? Or how comes it that the bull replaces the cow as an object of worship in the Indus period, only to be displaced again by the cow in succeeding ages ? Or, again, how comes it that the Indus culture betrays so many survivals of the Neolithic Age—in the shape of stone implements and vessels—if the copper or bronze and iron culture of the Indo-Āryans intervened between the two ? Clearly these considerations put out of court any solution of the problem which postulates an earlier date for the Vedic than for the Indus civilization. But if it was not earlier, are there any grounds for supposing that it was evolved out of the latter ? In other words, could the Indo-Āryans have been the authors of the

[1] Cf. *supra*, p. 27.

[2] In HR Area, Section B, Block 2, House IX, Room 85, there is a depression in the latest floor which might conceivably have been an *agni-kunda*, but at best it is a very doubtful example.

Indus as well as of the Vedic civilization? Here, again, we are faced with a like dilemma. For, though on this assumption we could account for such phenomena as the introduction of iron, of the horse, and of body armour, all of which might have signalized merely a later phase of the same culture, we are wholly at a loss to explain how the Indo-Āryans came to relapse from the city to the village state, or how, having once evolved excellent houses of brick, they afterwards contented themselves with inferior structures of bamboo; or how, having once worshipped Siva and the liṅga and the Mother Goddess, they ceased to do so in the Vedic Period, but returned to their worship later; or how, having once occupied Sind, they subsequently lost all memory of that country and of the Lower Indus.

We need not, however, labour the subject further. Enough has been said to show that, from whatever angle we view these civilizations, it is impossible to discover for them a common source, or to explain their divergent characters on any hypothesis other than that the Vedic was not only the later of the two, but that it had an independent development.

Sequence of Indus and Vedic civilizations.

And this brings us to another question. Are we to assume that the Vedic followed directly after the Indus civilization in the Panjāb, or that there was an interval between them? In Chapter XXIII Professor Langdon expresses the view that the Āryans in India are far more ancient than history has hitherto admitted. "Their migration," he writes, "across Anatolia, where traces of them are found in the inscriptions of the Hittite capital as early as the seventeenth century B.C., is an hypothesis entirely contradictory to the new situation revealed by the discoveries in the Indus Valley. Far more likely is it that the Āryans in India are the oldest representatives of the Indo-Germanic race." Professor Langdon does not seek to identify the Indo-Āryans with the authors of the Indus civilization, but he is led by his theory on the derivation of the Brāhmī from the Indus script to infer that the Āryans must have been established in India and in contact with those authors long before the middle of the second millennium B.C., when, according to the majority of Vedic scholars, they first entered India. With this view of Professor Langdon's I must confess that I find it impossible to agree. His derivation of early Brāhmī from the Indus script may or may not be substantiated. Granted, however, that it is well founded, and granted, too, that it was the Indo-Āryans who evolved the Brāhmī script out of the Indus pictographic signs, is there any evidence that they did this before the latter half of the second millennium B.C.? So far as I am aware, not a shred. The remains at Mohenjo-daro may not carry us later than the first quarter of the third millennium B.C., but we cannot suppose, because this particular city ceased to exist then or because Harappā may have followed suit a few centuries afterwards, that therefore the Indus civilization was totally eclipsed at that time. On the contrary, the remains at Jhukar only a score of miles or so from Mohenjo-daro seem to indicate that this civilization lingered on long after the disappearance of both Mohenjo-daro and Harappā. The days of its glory had doubtless passed; but, even so, there is no justification for supposing that so all important an art as that of writing would have ceased to be practised. In my own view nothing has yet been found either at Mohenjo-daro or Harappā that conflicts with the orthodox theory that the Indo-Āryans entered the Panjāb about the middle of the second millennium B.C.; but from the picture we get in the Vedas of the pre-Āryan population, I incline to think that the Indus civilization could then have been but a mere shadow of its former self.

Chapter IX

THE STŪPA AREA

I. THE BUDDHIST STŪPA AND MONASTERY

The mound and its excavation.

THE loftiest of all the mounds at Mohenjo-daro is the one near the north-west corner of the site, crowned by the Buddhist stūpa and monastery. Including the stūpa itself, this mound rises some 72 feet above the surrounding country and 227 feet above mean sea level. On the east it breaks abruptly away to the plain ; on the other three sides, where there are many solid ruins of the Indus Period to resist denudation, the slope is more gradual.

The Buddhist monuments on the summit of this mound were mainly excavated by Mr. R. D. Banerji in 1922–3 ; the deeper digging in the prehistoric strata beneath them was started by Mr. Banerji, but chiefly done by Mr. B. L. Dhama under my own direction in 1925–6. In the account which follows of Mr. Banerji's excavations I have made whatever use was possible of the excavator's own report alluded to above and have abstracted from it everything that seemed necessary. Where, as sometimes happens, my own conclusions differ from his, the fact has generally been noted. If in certain cases this has not been done, it is because the knowledge we have gained of Mohenjo-daro and its remains during the last five years has cleared up many problems that were obscure when Mr. Banerji first started his excavations and no useful purpose would now be served by recapitulating theories that are no longer tenable.

The buildings and their successive levels.

The Buddhist monuments brought to light by Mr. Banerji comprise a spacious quadrangle open to the sky, with a lofty stūpa in its middle and rows of monastic buildings enclosing it on the four sides (Pl. XVI). The whole complex of these monuments, including stūpa, courtyard, and surrounding monastery, was many times repaired or rebuilt—on each occasion at a successively higher level. Thus, the original pavement of the courtyard was 20 feet below the bottom of the stūpa drum[1] ; the next floor was 1 to 2 feet above it, and then followed a succession of at least three more floors, the last nearly 6 feet higher than the original one. It is to be understood, however, that the intervals between these various floors is by no means uniform ; for it was only when a floor had sunk in places or became uneven that the surface was again levelled up and a new floor laid at a higher level. Hence in one spot the débris intervening between, say, the first and second floors may be a foot in thickness, at another it may be two. The relative levels of these floors, as well as of those in the surrounding cells and other chambers, are indicated, as nearly as it has been possible to ascertain them, in the section on Pl. XVI. Of three of these pavements, the levels are determined by actual remains ; of the two others, which are shown in dotted lines, they have been calculated from the indications afforded by the additions to the stūpa plinth.[2]

[1] Or 44 feet approximately above the level of the plain, and 199 feet above mean sea-level.

[2] If any remains of these pavements existed, they had been removed by Mr. Banerji in the course of the excavation of the stūpa.

The lowest pavement in the series is composed of kiln-burnt bricks taken from the older buildings of the "Indus" period. The bricks are laid flat, in a double course, with mud mortar between; beneath them is a foundation of crude brick about 1 foot in thickness resting on the levelled débris of prehistoric structures. The second pavement is also of burnt brick, resting on crude brick. The succeeding pavement was laid with less care, on a foundation of débris.

Reconstructions of stūpa plinth. The original stūpa, which stood near the middle of the courtyard and which was probably the first of the monuments to be erected here by the Buddhists, sprang from a little lower level than the earliest of the pavements. The body of it is still concealed by later accretions in the core of the edifice, but sufficient is visible on the east face, where some of these accretions have disappeared, to show that it had a width from north to south of just over 50 feet. Its length from east to west cannot be precisely determined, but, including the steps on its eastern side, some of which still exist, it could not have fallen short of 74 feet. To the plinth of this original structure (*vide* section on Pl. XVI) there was added later on a low retaining wall round about the base, and at the same time the second pavement was laid over the courtyard. From the fact that the foundations of the retaining walls are not carried down to the original pavement, it may safely be inferred that a certain amount of débris had accumulated in the meantime and the level of the courtyard had thereby been automatically raised. The third addition to the plinth rests directly on the remains of the retaining wall (II), at a height of somewhat more than 3 feet above the original pavement. In conformity with a common Buddhist practice, this addition may have taken the form of a complete envelope to the plinth, and possibly to the body of the original stūpa as well; but if this was so, most of the envelope has long since crumbled to ruin. The foundations of the last addition (IV) spring from a level fully 5 feet above the original flooring, and the pavement associated with it must have been at least another half a foot higher. That a long period of time must have elapsed between the building of the original fabric and the latest casing will be obvious to anyone familiar with the very slow rate at which the floor levels rose around this type of ancient monument. Mr. Banerji estimates it at some three or four centuries at least, and, judging by the accumulation on many other Buddhist sites, this estimate appears reasonable, though, as we shall see anon, I do not share Mr. Banerji's view as to the date at which the stūpa was first erected.

Position of stūpa in quadrangle. In relation to the quadrangle around it, the position of the stūpa is not strictly symmetrical, for the reason no doubt that, as already indicated, it was the first of the buildings to be erected by the Buddhists on this site, and the plan of the others, that is of the courtyard and monastery, had to conform to the restricted space available on the summit of the mound. On the north the distance between the stūpa platform and the surrounding cells is about 22½ feet; on the south about 20 feet; on the west between 12 and 14 feet; and on the east about 34 feet.

Character of masonry. The masonry of the plinth was from first to last of a somewhat rough and ready kind compared with that of the prehistoric monuments beneath. No bonding material save mud was used, and much of that has been washed out. The bricks, which are kiln burnt and manifestly taken from the older remains round about, are laid in alternate courses of headers and stretchers, but the bond between them is frequently broken, and the joints are often more than an inch in thickness.

Approach to stupa from east. Measured from the first pavement to the base of the drum the height of the plinth is 20 feet, unusually lofty for a stūpa of such moderate dimensions. The approach to it was in the middle of its eastern side, and was more than ordinarily elaborate. It consisted of a series of steps and landings (Nos. 60 to 63 on plan), which led upwards into a narrow vestibule (64) measuring 27 ft. 6 in. wide, by 5 ft. 7 in. from front to back. On the

opposite side of this vestibule was a short passage (65), from which two flights of steps ascended north and south to the top of the platform ; and closing the passage at its western end was a small image-chapel, or niche, the floor of which, though now destroyed, appears to have been 3 ft. 9 in. above the pavement of the passage (Pl. XVII, *a*). This image niche is 7 feet deep by 4 ft. 6 in. wide, and occupies a particularly prominent position, being directly opposite to, though slightly above, the approaching stairway. In it Mr. Banerji found some remains of a statue of the Buddha, seated cross-legged, probably on a lotus throne. The core of the image, he says, was of brick covered with a coating of mud, which had originally been painted or gilt.

The flights of steps leading up from the passage 64 are 3 ft. 11 in. wide, with treads between 10 and 11 inches deep and risers 8 inches high. Eight steps survive of the stairway on the south, seven of that on the north. Whether the flights were originally continued in the same direction, viz. one to the north and the other to the south, up to the top of the platform, or whether they were returned westward, there are now no indications to show ; it is probable, however, that they were continued in the same direction.

Drum of stūpa.

In order to provide sufficient space for the stepped approach at the east end of the plinth, the stūpa was erected, not directly in the middle of the plinth, but a little to the west of it. The dome of the monument has long since disappeared and all that is left is the lower part of the circular drum, which is still standing to a height of 8 ft. 4 in. above the plinth. This drum, the full diameter of which appears to have been about 33 ft. 6 in., is hollow in the centre and composed of sun-dried bricks measuring 11½ in. by 5½ in. by 2¾ in., laid in mud mortar with close regular joints. Long before Mr. Banerji's arrival, villagers are said to have excavated beneath the hollow middle of the drum, to a depth of some 14 feet, in the hope of finding hidden treasure, and to have lighted upon a relic casket. Some fragments of this relic casket, which was of alabaster, were subsequently found by Mr. Banerji in the débris, but not enough to allow of its reconstruction.

Interior of same.

From the fact that the sun-dried bricks on the inner facing of the drum were laid with care and presented a smooth appearance, Mr. Banerji was led to infer that the stūpa was originally intended to be hollow, and on the strength of a few small fragments of painted plaster which were found by his assistant, Mr. Wartekar, while clearing the western side of the stūpa plinth, he also inferred that the interior must have been plastered and painted. These inferences are not unreasonable ; for there seems little purpose in giving a smooth finish to the brickwork inside the drum, if it was merely to be filled in with clay or débris ; nevertheless, I confess to some hesitation in accepting them, first because there is not a trace of plaster in the drum itself and nothing to show that the plaster fragments found by Mr. Wartekar ever came from the interior ; secondly, because among all the Buddhist stūpas known to us in India there is not one, so far as I am aware, fashioned in the manner suggested by Mr. Banerji ; thirdly, because a dome of sun-dried brick could not have been safely constructed over so large a chamber. In building both circular and square-based stūpas it was customary first to erect the enclosing wall (which might or might not be strengthened by walls radiating from the centre) and then to fill up the inside with more or less solid débris. Chambers of not inconsiderable size for the reception of relics are, it is true, not infrequently found in the heart of such structures, but none of the many relic chambers I have seen are at all comparable in size with this supposed one at Mohenjo-daro, nor were their walls ever adorned with mural paintings. All things considered, therefore, I incline to the view that the interior of the drum was filled in as usual and covered with a dome of the customary pattern.

Fragments of painted plaster.

Parenthetically, it may here be added that the fragments of plaster found on the western

side of the plinth were coloured blue, yellow, red, and chocolate, and bore traces of figures and decorative designs, as well as fragmentary inscriptions in Brāhmī and Kharoshthī. Among the latter Mr. Banerji recognized the word *samana* (Skr. *śramaṇa*) in lettering of the Kushān epoch, but whether of the early or late part of it, is disputable.

Original design of stūpa.

The restoration of the stūpa sketched in Fig. 9 is meant merely to give the reader a rough idea of the appearance it is likely to have presented in the days of the Kushāns. So far as the drum and dome and crowning features are concerned, the sketch is based on data gleaned from more or less contemporary monuments at Thūl Mīr Rukān in the same District of Lārkāna, at Mīrpūr-Khās, in the Thar and Pārkār District, and at Taxila in the Panjāb, but the elevation even of the plinth is little more than suggestive ; for the brickwork is so denuded that it is impossible to be sure of its original contour.

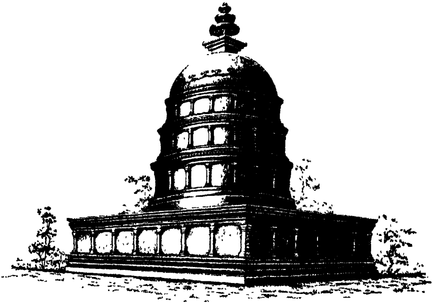


FIG. 9.—Conjectural restoration of stūpa at Mohenjo-daro.

Remains in courtyard.

Grouped about the main stūpa in the courtyard were the relics of several small monuments of the same class, but nothing was left of them except their plinths, and, as will be evident from Pl. XV, *b*, even these were in the last stages of decay. Besides these small stūpas, which subsequently had to be removed, Mr. Banerji unearthed a few objects of stone while clearing the eastern end of the courtyard. These included a slab of red sandstone, 2 feet in length, which he took to be a seat, two legs of the same material belonging to this or another seat, and two broken lids of vessels or relic caskets.

The Monastery.

On all four sides of the courtyard are ranges of cells and other apartments belonging to the monastery. Like the stūpa plinth, these structures are all built of kiln-burnt brick taken from older structures, and laid in mud instead of mud and gypsum, as many of the prehistoric buildings were.[1] On the analogy of other monasteries of the Kushān period, it may be assumed that they possessed two storeys with a wooden verandah in front—that is, facing inwards towards the courtyard—which would serve at once to shield them from the

[1] See p. 15 *supra*

sun and provide access to the chambers on the upper floor. The roof would be carried on timbers and covered with mud, with a slight slope inwards towards the court, the rain-water from which would be carried off by a drain passing beneath one or other of the cells. This was the usual design adopted in Buddhist monasteries at this period, and, though in this case no traces of the upper storey or verandah has survived, the large quantities of ashes found by Mr. Banerji in the courtyard, on the plinth of the stūpa and in the cells—the outcome, obviously, of a general conflagration—point to the existence of far more timberwork than would be needed for a range of single-storeyed brick buildings, without any verandah.

Low wall round courtyard. Round the courtyard and against the inner face of the monastery, was a low wall (RR in plan and sections) which was evidently contemporary with the original pavement but subsequently repaired and heightened as the level in the courtyard rose. It served, no doubt, to strengthen the foundations of the monastery and probably also to support the timbering of the verandah, which we may suppose to have been carried on brackets instead of the more usual pillars, since the space between the stūpa and cells was too constricted for a pillared verandah. At the same time this low wall would provide a convenient seat for the monks when sitting in the courtyard.

Entrance to monastery and adjoining chapel. The entrance to the monastery was on the east side of the quadrangle directly opposite the steps leading up to the stūpa. Here there was a vestibule (4 in plan) measuring 25 ft. 6 in. by 13 ft. 6 in., with a doorway in the middle of its western side, and doubtless another doorway corresponding to it in its eastern, though the latter is so ruined that all vestiges of the doorway have disappeared. Immediately to the right, that is, to the north of this vestibule, is a small chapel (3), in which Mr. Banerji found eight fragments of stucco painted with alternating bands of red and black and belonging, as he supposed, to the robe (*sanghaṭī*) of a Buddha figure, as well as the torso of a clay image of a Bodhisattva with a necklace or garland, coloured red, around its neck. The walls of the chapel appear to have been plastered with mud and painted. The débris here also contained a few bits of moulding—pink in colour—which the excavator surmised to have belonged to an edging over a dado. On the floor of the chapel were two separate pavements of brick, corresponding with those in the large halls 1 and 5, as well as in many of the cells. As a foundation for the latter of the two pavements, Mr. Banerji notes that 3 to 4 inches of sand had been spread over the earlier pavement followed by three courses of sun-dried brick.

Stairway to upper floor. Next to this chapel, on its north side, is a long narrow chamber (2) with two steps at the entrance, one of which consists of limestone blocks taken from the covering of a prehistoric drain. Although all the other steps have perished, there can be little doubt that this chamber contained a staircase ascending to the upper storey. In the contemporary monastery at Jauliān, near Taxila, the staircase is placed, for the sake of convenience, next to the chapel, in order, no doubt, that the monks might pay their devotions at the latter before ascending to their quarters in the upper storey. Manifestly, also, it would make for the convenience of the monks occupying cells on the first floor that both chapel and staircase should adjoin the main entrance.

Hall of Assembly. The large hall in the north-east corner beyond the staircase, which measures nearly 44 feet long by 26 feet broad, I take to have been a Hall of Assembly—a usual if not indispensable adjunct in the larger monasteries of this period. Its flooring belongs to two periods. The earlier, which corresponds both as to level and construction with the lowest pavement of the courtyard, is composed of burnt brick laid flat on a foundation of mud a few inches in thickness ; the latter, which is about a foot above the earlier, is also of burnt brick, but laid on a foundation of mud about 1 ft. 6 in. in thickness. The western and southern walls were reconstructed when the floor was raised, the western being entirely

rebuilt, while the southern was strengthened by the addition of an extra length of walling on its northern face (KK), behind which the original wall (LL) can still be seen. As thus reconstructed, both these walls were relieved by flat shallow pilasters, 4 ft. 5 in. wide, projecting 6 in. from the wall face and tapering upwards for a height of 2 feet above the floor. These pilasters start from the level of the later floor and are doubtless contemporary with it. There are corresponding pilasters also in the two corners of the Hall that have survived. The northern and eastern walls have almost completely disappeared, but it may safely be presumed that they also were relieved with similar features.

In the centre of the hall are seven square plinths of brick masonry. Three of these (A, B, and C), which are on the central axis north and south, spring from the level of the earlier floor, the other four (D, F, H, and J) from the level of the later floor, two of them (D and F) being laid partly over the older plinths A and B. The former are approximately 5 ft. 2 in. square; the latter 4 ft. 7 in. square and about 2 ft. in height. Evidently all these plinths served as the bases of pillars for the support of the roof, and, indeed, in the case of the plinth F the first course of brickwork belonging to the round shaft of the pillar is still preserved. Originally—that is, at the time when the earlier floor was laid—there were three pillars down the middle of the hall; but later on, when the floor was raised and the walls reconstructed, the single row of pillars was replaced by two rows with three pillars in each. Unfortunately, two of the later pillars in the east row have entirely disappeared along with the eastern wall.

Common room or refectory.

The second large hall, which adjoins the entrance vestibule on the south, is the largest apartment in the monastery. It has an area of 41 feet by 22 feet and is entered from the courtyard by a doorway 5 ft. 4 in. wide with two steps on the inner side.[1] Inside the Hall are two pavements corresponding with those in the "Assembly Hall" and vestibule. On the earlier of these stand the remains of three brick plinths, which, like the older ones in the Assembly Hall, are set in a row down the middle of the hall on its N.–S. axis and doubtless served a similar purpose, viz. as bases of pillars for the support of the roof. Originally, they measured a little over 5 feet square, i.e. the same as their counterparts in the "Hall of Assembly", but later on were twice reconstructed and enlarged. These reconstructions are quite clear in the plinth M at the north end of the row, the first of them having been effected when the floor level had risen only some 4 inches above the original pavement, the next when the second brick pavement was laid at a height of about 1 ft. 7 in. above the original one.

To what use this second hall was put can only be surmised. It is more simply designed than the other hall, and for that reason is less likely to have been the "Assembly Hall". It may have been used as a "common room", or at one time perhaps as a refectory; but, if I am right in supposing that the group of rooms outside the south-west corner were kitchens, storerooms, and pantries, it is probable that, after they were built, the refectory also would have been located there. It should be added that, at the time when the later brick pavement was laid, the southern wall of this hall was reinforced by an inner lining, 1 ft. 9 in. in thickness, just as the southern wall of the Assembly Hall was, and a similar lining was also provided at the same time on the inner face of the west wall on each side of the entrance steps, the lining south of the steps being 1 ft. 2 in. and that to the north of them 1 ft. 9 in. in thickness.

Foundations at S.-E. corner.

At the south-east corner of the monastery the ground shelved away very rapidly, and consequently the east wall of the common room or refectory, as well as of the corner room 6, had to be carried down 6 feet below the surface and strengthened on the outside by a heavy foundation abutment nearly 7 feet in thickness (PP in plan).

[1] When the floor level was raised, the threshold of the doorway was also raised to a corresponding degree.

Monks' quarters.

Thus, on the east side of the monastery there were two large common rooms, an entrance vestibule, image shrine, and staircase leading to the upper storey. On the other three sides were the quarters of the monks. The majority of these comprised two apartments—an inner one for sleeping and an outer one for living purposes. The best of these quarters are those on the north side of the quadrangle. Here the sleeping rooms are equal in size to most of the living rooms, while the quarters numbered 37 and 38 at the north-west corner are the biggest in the monastery, No. 37, which was no doubt the living room, being in the form of a gnomon. On this side, too, there are separate passages (41 and 48) communicating with two of the rear rooms. To what use the narrow chamber 40 was put, there is nothing to show. Its long narrow plan suggests that it was an image shrine, like No. 3; but it is hardly likely that there would have been two such shrines in the residential quarters.

On the south and west sides some of the sleeping rooms (e.g. Nos. 17, 19, 31, and 35) are very small, being no more than 3 to 4 feet in width—just sufficient, that is, for a bed; and they are placed, moreover, at the side instead of in the rear of the living rooms. As originally planned, the monastery possessed fifteen of these double quarters on the ground floor and presumably about twenty-five on the first floor. since there would be few, if any, common rooms above, and the space therefore which the latter occupied on the ground floor would be free for additional cells on the first floor. Thus, the number of monks accommodated in this monastery may be estimated at forty or thereabouts. Among the living quarters on the ground floor I do not include Nos. 25, 27, and 29, as there is no sleeping room connected with them, and it is probable, therefore, that they were used for other purposes.

Additional chambers on north side of monastery.

The large chambers at the back of the living quarters on the northern side are not part of the original design. They were added later on, some of them probably when the stūpa and monastery were repaired, probably in the third century A.D., and others still later, as indicated by the different hatching in the plan. It is to be understood, however, that the remains of these apartments are very fragmentary, and it is impossible to affirm anything definite regarding their purpose or date beyond the fact that they were later additions. The group of rooms numbered 26, 27*a*, 29*a*, and 30*a* behind the southern end of the western range, may also be a subsequent addition, as their walls are not bonded with those of the cells in front of them. Judging by the plans of other monasteries of the Kushān period, I surmise that they served as kitchens, pantries, and storerooms, and, if this surmise is correct, it is highly improbable that they were contemporary with the original edifice. Up to the end of the third century, if not later, it was unusual to have kitchens, pantries, and the like attached to monasteries. Before that the monks seem to have begged and eaten their food in the towns, or to have prepared it, each for himself, in his own cell. It was not until conditions became more luxurious that common kitchens, storerooms, and other such amenities were provided, and the monks thus enabled to devote more time to their religious and literary activities.

Structural and other features.

As to structural and other features, there is little in the much mutilated ruins of the monks' apartments to be chronicled. In most of the rooms round the quadrangle there were two well-laid floors of burnt brick corresponding with the brick floors of the courtyard and common rooms on the eastern side, and, besides these, there were remains of other floors, which were probably contemporary with the later reconstructions of the stūpa already alluded to, though it is to be noted that the floors in the interior of the cells were sometimes lower than the corresponding floor of the courtyard. An illustration of how these floors succeeded one another in the cells can be seen in the sectional drawing on AB, Pl. XVI, which passes through cell 24. Here there were three well-defined floors of burnt brick, the lowermost corresponding with the first pavement of the court, the next with the second, and the

uppermost probably with the third, notwithstanding that it was some 1 ft. 6 in. lower than the actual level of the courtyard at that time.

The interior walls of the cells were plastered with fine mud and perhaps painted as well, since Mr. Banerji found traces of red and white paint in Room 27, though, in view of the fact that this room was probably not a living room, it is permissible to infer that the decoration found on its walls was not a characteristic of the ordinary cells. One of the quarters (No. 30) is unique in possessing a deep niche, possibly a cupboard, in its south wall, while leading off from another is a curious torpedo-shaped chamber (No. 22 on the south side) which deserves more than passing notice (Pl. XVII, *b*). As may be seen from the plan, this narrow little apartment communicates with the small room 23 and through it with the larger room 24. Mr. Banerji took it to be a tomb, and says that it was formed at some later date by the erection of a wall from north to south across chamber 23. That this, however, was not the case, is evident from the fact that the cross wall referred to between 22 and 23 is bonded into the other walls and must therefore have been an integral part of the monastery, when it was first erected. In the débris of this chamber Mr. Banerji found a large number of pots with pointed ends, which he took to be burial urns, and he adds that many of the pots in the lower layers were "arranged one over the other, the lowest being placed on ring-shaped stands". He states, moreover, that "two large earthen jars were also discovered here, both of which contained smaller burial urns, each of which in its turn contained uncalcined human bones in crude crucible-shaped terra-cotta reliquaries. After clearing the mass of burial urns we came across a crude relic casket made of coarse-grained sandstone measuring 6 inches approximately in diameter with a round cavity in its centre. This cavity was 1 inch deep and was covered with a very small lid made of conch-shell. A larger lid of marble was laid on the smaller one. Three round copper coins of Vāsudeva, of the Śiva and Bull type, were discovered in the upper layer of débris. In the larger burial jars of this room we found a number of uncalcined bones, which were too large to be contained in the smaller burial urns with pointed ends. Evidently this little shrine was regarded as very holy and was a favourite spot for the deposit of burial urns". I quote Mr. Banerji's own words in view of the manifest difficulty of explaining the facts as recorded by him. That the chamber is part and parcel of the Buddhist monastery cannot be questioned. How came it then to contain the same type of small pointed vessels (which he calls "burial urns", but which in the Indus Period were almost certainly drinking goblets) that are so characteristic of the Indus Period? Are we to infer that these vessels remained in use right down to the time of the Kushāns? Or, in the alternative, that for some inscrutable reason the Buddhist monks preserved these relics of an older civilization in this small chamber?[1] And how, again, are we to explain the presence of layers upon layers of pots and débris in a chamber provided with an open doorway and never apparently walled up? But for the facts as stated by Mr. Banerji, one might naturally have supposed that this chamber contained a staircase ascending to the second storey and that the space beneath the staircase was filled in with débris, which, if taken from the ruins round about, might well have contained pottery and other objects belonging to the Indus Period. But, unless Mr. Banerji's observation is at fault in regard to the details, this explanation will not meet the case, and we must leave the riddle unsolved. Let it be added, however, that although no other example of such a burial

Chamber 22.

[1] Regarding these pointed drinking goblets, see my remarks in Chap. IV, p. 37. I think there is little doubt that the goblets found in Chamber 22 are of the Indus Period, and came from the surrounding ruins, where tens of thousands of them are to be found in the débris. Probably they were used in Chamber 22 merely as an infilling beneath the staircase which I presume to have existed there.

chamber in a Buddhist monastery is known to us, and though prima facie it is unlikely that such a chamber would have been specially made amid the living quarters of the monks, these reasons are not in themselves sufficient to justify us in discarding the excavator's explanation.

Discovery in Chamber 27.

Another find, which Mr. Banerji interprets as a post-cremation burial, was made by him in chamber 27, and has to be considered along with the aforesaid deposit. In the south-east corner of this chamber, at the spot shown on the plan, was a large earthen jar of the *ghara* type, partly buried beneath the level of the earliest Buddhist brick floor, partly protruding above it, a section of the floor having been broken through to make room for it. The mouth of the jar was covered with a slab of sandstone, and inside it Mr. Banerji found a number of the same kind of small vessels with pointed ends that he found in Chamber 22 and which he took to be burial urns. "These," he writes, "were embedded in a thickish gluey soil mixed with small fragments of bones. In one or two cases a small piece of bone was placed inside a crude reliquary of coarse earthenware and then placed inside a larger burial urn with pointed end, surrounded by miniature necropolitan pottery. Among the fragments recovered from this large jar were pieces of the upper part of a painted vase. The painting in this case consisted of thin lines of white on the body, with a single horizontal row of stylized flowers at the base of the neck. The most peculiar finds were ten fragments of a highly polished black vessel, which appears to have been pieced together before its deposit. The different pieces were bound together by means of little holes bored in many of them. In texture and polish these black fragments resemble the pottery discovered at Pātaliputra. There cannot be any doubt that the large burial jar contained the bones of more than one person and several different deposits." Now it is clear that this jar must have been buried beneath one of the later floors in this chamber, not beneath the earliest one, since a portion of the latter was roughly removed when a hole was scooped out for the reception of the jar, and the jar itself was left half protruding above this pavement. We can be quite sure, then, not only that the jar is of Buddhist date but that it is relatively late, even at that. Now, so far as I am aware, no other example is known of such a burial inside a cell. But that the idea would not necessarily have been repugnant to Buddhist ideas is evidenced by the stūpa in a cell at Jauliān near Taxila, which doubtless contained the bodily relics of one of its occupants. That the deposit was not of pre-Buddhist date, as Mr. Banerji suggested, is evidenced not only by its position, as described above, but by the fragments of polished black and painted pottery found inside it. Both of these wares are characteristic of the Buddhist period. The former was made especially for begging bowls, which, being much venerated and treasured, were more likely than ordinary vessels to be repaired when broken.[1] The latter is evidently the same class of pottery as that recently unearthed by Mr. Majumdar at Jhukar near Lārkāna, and is definitely referable to the Kushān epoch. In face of these facts the conclusion is inevitable that this jar belongs to the Buddhist epoch, and consequently that the pointed vessels found inside it must also have been in use at the same age, but in my opinion there can be little doubt that the latter had been collected from among the prehistoric ruins around, where even now they are to be found in vast numbers.

Find of prehistoric vessel beneath Chamber 39.

Before leaving the subject of this alleged burial jar it should be added that Mr. Banerji also found below the foundations of the eastern wall of Chamber 39 another large earthenware vessel which, he says, "contained a number of burial urns with pointed ends and each of these urns contained miniature pottery, flint scrapers, copper ornaments, and uncalcined bones." The position of this other vessel under the foundations of the monastery and the presence of the flint scrapers indicate that it appertained to the prehistoric stratum immediately below the Buddhist

[1] Several pieces of a begging bowl repaired in the manner described by Mr. Banerji were found some years ago at Sārnāth.

structures; and it is quite distinct therefore from the later Buddhist vessel described above. Near the spot where the latter was found, Mr. Banerji also brought to light a small grave of a child constructed at some time or other on the top of the ruined front wall of Chamber 27, at a height of 6 ft. 6 in. above the original brick pavement (Pl. XVII, *c*). The grave was built roughly of bricks taken from the ruins and contained the remains of a young girl, which are said to have been singularly life-like when first exposed, but rapidly crumbled to dust. From the position of the grave it is obvious that this burial cannot have taken place until after the ruins of the monastery had become choked with débris and sand to a height of some 9 or 10 feet above the original floor level, since it may reasonably be presumed that the grave would be sunk 2 or 3 feet below the surface of the ground. Indeed, from Mr. Banerji's description of the remains it seems more than likely that the grave was quite a modern one.

Other minor finds from monastery.

Apart from the above, the minor finds from the monastery quarters consisted almost exclusively of coins, the only exceptions being a roughly made toy horse of terra-cotta, a miniature jar, and a fragment of a marble relic casket from Room 33; a round lid of conch shell from Room 42; and a tiny bearded head of painted stucco from Room 45, which is evidently a non-Indian type and, as Mr. Banerji suggests, may well have been meant to represent a Scytho-Parthian or Kushān.

Coin finds.

The coin finds were many and more than usually interesting, as they comprised some hitherto unknown types. Most important among them was a hoard of 1684 coins in an earthenware pot, which Mr. Banerji discovered just below the second floor (termed "intermediate" by him) at a depth of 3 ft. 6 in. beneath the original surface. These 1684 coins are square in shape and cast, not die-struck, and are of a date subsequent to the Kushān King Vāsudeva I. No doubt they are local issues of Sind, since they have been found at Mohenjo-daro and (more recently) at Jhukar near Lārkāna, but nowhere else in India. All belong to the second class of coins described below by Mr. Majumdar. Along with them were found, not in the pot itself, but at the same or a little lower level, seven other coins which also appear to be local issues of Sind and, like the above, posterior to Vāsudeva I. Another hoard of seventy-six coins of Vāsudeva I was also recovered in the next Chamber 35,[1] beneath a floor which is 1 ft. 6 in. lower than the second floor in the neighbouring room and appears to correspond with the earliest of the Buddhist pavements in the court. Besides these two hoards Mr. Banerji found some 200 other coins scattered here and there in the débris (notably in Rooms 20, 32, 36, 37, 38, and 41), which, with one exception, belong to one or other of the types described by Mr. Majumdar and are all referable to the age of Vāsudeva or later. The exception in question is a much worn specimen which the finder designates as Indo-Greek and which he says resembles in size and shape the large copper issues of Kadphises I and II. As it was found in the upper débris of Room 38, it does not help to elucidate the chronology of the buildings.

Evidence of date.

From these coin finds it is evident that the monastery must have been in occupation from the time of Vāsudeva I onwards, and from the positions of the two hoards in Rooms 34 and 35—one beneath the earliest and one beneath the second floor—it may reasonably be inferred that the earliest floor was in use during or not long after the reign of Vāsudeva[2] and

[1] Mr. Banerji also records that fifty-three local square coins of Sind were found in the same spot as these coins of Vāsudeva I, but he does not say whether in the débris of the chamber or below the first pavement. Probably it was the former, but without more explicit information on the point it is not possible to utilize the evidence which these fifty-three coins might otherwise have afforded.

[2] The coins of Vāsudeva I were in free circulation for several generations after his death, but it is highly improbable that as many as seventy-six coins of this king and of this king alone would have been buried at any time except during or very shortly after his reign.

that the second floor belongs to the period when the local square coins were in circulation. As to the relative dates of these floors, however, the evidence is by no means conclusive. The several floors are so close together—not more than a foot or so intervening between them—that anyone burying a treasure and making a hole for it 3 or 4 feet deep, might easily have penetrated through two or three floors; and, if this happened, the coins found beneath any given floor would obviously be a very unreliable criterion of its age. Mr. Banerji, who made these finds, wrongly ascribed the local square issues [1] to the time of the Mauryas and inferred that the earliest floor was prior to the third century B.C. and the second prior to the second century B.C. Both dates are clearly too early by several centuries. There is nothing whatever in the stūpa or monastery to suggest that either antedated the Kushāns. The stūpa may have been founded by one of the earlier Kushān kings, Kanishka or Huvishka,[2] but in view of the conspicuous absence of any coins belonging to either of these kings in the monastery buildings, it is unlikely that the latter are older than the reign of Vāsudeva I (c. A.D. 185–220).

How long they remained in occupation can only be vaguely surmised. Some of the coins appear to be as late as the fifth or even sixth century A.D. and the testimony they afford is corroborated by the buildings themselves; since it is evident from the several rebuildings of the stūpa and the succession of pavements in the courtyard and rooms that a long period—hardly less than two or three centuries—must have elapsed between the original foundation and final decay of these monuments. Probably we shall be on the safe side if, from start to finish, we place their history between A.D. 150 and 500.[3]

II. REMAINS OF THE INDUS PERIOD IN THE STŪPA AREA

Extent of excavations and nature of remains exposed.

From the sectional drawings on Pls. XVI and XVIII it will be seen that the prehistoric remains in the Stūpa Area commence immediately below the earliest Buddhist pavement. Indeed, it was because they happened to be so close to the surface that Mr. Banerji first lighted upon them when excavating the monastery in 1921–2. The structures which he then exposed and which, from a few small objects associated with them, he recognized as belonging to the Chalcolithic Age, were as follows: (a) the walls which run beneath the monastery chambers numbered 3, 4, and 34; (b) two short sections of drains with some adjacent walling in Chambers 67 and 68 (Indus Period) on the east side of the stūpa courtyard; and (c) the greater part of the small group of chambers numbered 7 to 14 outside the limits of the monastery on the east. The rest of the Indus Period remains in this area were excavated by Mr. B. L. Dhama, under my personal direction, during my operations of 1925–6.

[1] He calls them *kārshāpaṇas* and describes them as die-struck instead of cast.

[2] That the stūpa antedated the monastery is evidenced, as I have already shown, by its position in relation to the buildings around (see p. 114 *supra*).

[3] Mr. Banerji put the period of their occupation from c. 300 B.C. to A.D. 200. The former date was suggested by the local square coins which he erroneously ascribed to the third century B.C.; the latter by the fragments of painted plaster (see pp. 115–16 *supra*), which he associated with the last rebuilding of the stūpa and assigned to the second century A.D. His arguments on this score, however, fall to the ground, first, because there is no reason for connecting the fragments in question with the stūpa drum rather than with the monastery rooms round the quadrangle, which would have been far more likely to be adorned with tempera paintings than the stūpa itself; secondly, because the palæographic evidence of the lettering on these fragments is not strong enough to warrant their ascription to the second rather than the third or fourth century A.D.

To have cleared these remains completely or even to the extent of recovering the main lines of their plans would have meant dismantling the Buddhist buildings above them, and, as there were obvious objections to removing such interesting landmarks, I confined myself to sinking three trenches inside the stūpa courtyard, each as broad and deep as the restricted area would permit, and a still deeper one (40 feet measured from beneath the earliest Buddhist pavement) outside the north wall of the monastery at a point where natural erosion in the side of the mound facilitated the task of clearing the lower levels (Pl. XIX, *a*). My main object in making these deep cuttings was to lay bare the succession of prehistoric strata from the top to the bottom of the mound; for I judged that this mound, being the loftiest and most conspicuous on the site, would be likely to yield specially instructive evidence on the question of stratification. In view, too, of the proximity of the Great Bath and other imposing structures on the west, I was hopeful that the remains concealed here would prove to be those of some religious or other edifice of more than ordinary interest. The latter hope was not to be fulfilled. So far as can be judged from the sections of these buildings exposed in the trenches, there is little difference between them and many others at Mohenjo-daro. They possess well-paved rooms and courtyards, bathrooms, drains, water-chutes, and the like—all well made, though not better made than in some other buildings, and all seemingly in conformity with the standard patterns, but with no features out of the common. This is no proof, of course, that the few remnants exposed did not form part of some temple or other sacred edifice, or perhaps I should say, of a series of such edifices, since they belong to several strata and to various ages. We know nothing as yet of the form which sacred buildings took at Mohenjo-daro and Harappā, nor, indeed, if they existed there at all, and it would obviously be rash to conclude that, because the features in question are characteristic of many of the residential buildings, they could not therefore have appertained to a religious one.

Stratification of remains.

Though nothing definite, however, could be ascertained about the plans and purpose of these structures, the digging proved very instructive in regard to their stratification. Between the earliest Buddhist pavement and the lowest point reached—within a space, that is to say, of 40 feet—seven different strata were revealed, all belonging to the Chalcolithic Period. The relative depths at which these strata occur and the complex nature of the remains will be apparent from the plans and sections on Pls. XVI and XVIII. In the case of the fourth and sixth strata the floor levels can only be surmised, since no actual floors exist; and in the other strata also there is, as might be expected, considerable variation in both floor and foundation levels.[1] As nearly, however, as they can be determined, the following represent the ground floor levels of the seven strata below the earliest Buddhist pavement :—

1st Stratum	(? Late I Period) . . .	1 to 2 ft
2nd ,,	(? Late II Period) .	3 to 5 ft
3rd ,,	(? Late III Period) . .	7 to 9 ft 6 in.
4th ,,	(? Intermediate I Period) . .	12 to 13 ft. 6 in.
5th ,,	(? ,, II Period) . .	15 to 16 ft.
6th ,,	(? ,, III Period) .	18 to 19 ft.
7th ,,	(? Early I Period) .	38 to 39 ft.

In the above table I have queried the equations between these seven strata and the successive periods represented in other parts of the site for the reason that in the present state of our knowledge it is impossible to be sure of them. We can say quite confidently

[1] The drains are, of course, laid below the floor levels.

that the first and second strata here belong to the Late Period and the fifth to the Intermediate, but we cannot be sure that the latter is to be co-ordinated with Intermediate II rather than with Intermediate III ; nor can we be sure that the third stratum does not correspond with Intermediate I rather than Late III. We must be prepared, therefore, for some possible modifications in these equations when the strata in different parts of the site have been more fully co-ordinated.

Construction of lofty platform in Intermediate III Period.

Between the sixth and seventh strata it will be observed that there is an unusually large interval of 20 feet. It is not, however, to be inferred therefrom that the period of time which elapsed between these strata was proportionately prolonged. The intervening space is occupied almost entirely by crude brick or alluvial mud heaped up artificially so as to form an immense platform over the whole of this stūpa area, as well as over a big expanse of ground to the north of it, and thus place the buildings erected on it out of reach of the floods. For the support of this platform stout retaining walls would be indispensable, and portions of such walls have been unearthed on the east and west, the former by Mr. Banerji during his excavations of 1921–2, the latter by Mr. Mackay in 1927–8. The western retaining wall (TT) follows a north to south line immediately below the western limits of the monastery. The eastern one (RR) can be seen to the right hand of the plan in Pl. XVIII, rather less than 40 feet east of Chamber 14*a*, and to the left of the picture in Pl. XXI, *a*.[1] The thickness of this retaining wall has not yet been ascertained, nor is it known whether the existing facing belongs to the original fabric or to a later repair. Near the foot of this wall on its eastern side Mr. Banerji also brought to light a long length of drain (SS in plan), which appears to belong to the Late Period (Pl. XXI, *a*).

First stratum.

To revert to the seven strata uncovered in the Stūpa Area, stratum I is represented only by a couple of walls in Chamber 11, a third between the Chambers 74 and 75, and a square floor of brick (62), probably the floor of a bathroom, near the S.E. corner of the Buddhist courtyard. The last mentioned, be it remarked, which is only a foot below the Buddhist pavement, is aligned differently, not only from the later Buddhist courtyard, but from the earlier Indus structures as well.

Second and third strata.

To the second and third strata, which I co-ordinate provisionally with the Late II and III Periods, belong the majority of the remains exposed in these trenches, viz. portions of the four buildings K, L, MM, and N, with a narrow lane between them, and a number of more or less disconnected walls in other parts of the trenches. Of the four buildings in question, three, viz. K, L, and N, belong in the main to the Third (Late III ?) Period ; the fourth, MM, also dates from the same Period, but was extensively reconstructed and its floor levels raised in the succeeding Period (Late II ?). This last is a well-built edifice of considerable size[2] and is distinguished by the presence of a number of small paved bathrooms and particularly well-made drains, which suggest that it was mainly devoted to bathing purposes and formed part of the large hydropathic establishment to which the Great Bath and other structures on the west also belonged. Of the drains which served this building and which belonged to the later reconstruction, one (EE) is carried east and west along the inner side of its northern wall through Chambers 10 and 11 and so beneath the monastery shrine (3)[3] ; a second (FF) empties itself from the bathroom 67 into the street drain (HH) on the north ; and a third (GG) running south to north through Room 68 also discharges into the street

[1] On the north it can hardly be hoped that any remains of a retaining wall will ever be found, since that is the direction from which the Indus floods invariably used to sweep down, and much of the mound on that side has consequently been washed away. Whether a retaining wall will be found on the south, remains to be seen.

[2] Its western half is buried under the fabric of the stūpa.

[3] In Chamber 10 there is a vertical drain connecting with EE, which served the upper storey.

drain HH a few feet further west (Pl. XX, *b*). A view of these drains as they emerge into the lane appears in Pl. XX, *b*. The second of them was lined on the inside with a coating of gypsum plaster containing an appreciable percentage of lime. The other drains may also have been similarly lined. Whether the lime was intentionally mixed with the gypsum or was in natural combination with it, is still a moot point, but it is noteworthy that gypsum and lime mortar was also used in the Great Bath, and that pure lime plaster also occurs at Mohenjo-daro. It is evident, therefore, that the properties of lime as well as of gypsum were understood and turned to account.

In the middle of building K Mr. Banerji believed that he had found the remnants of a broad staircase ascending the great platform on the east side, but the further clearance of this building has shown the supposed steps to be illusory.

The lane between the buildings MM and N runs east to west as far as the western corner of the latter and then turns north. The street drain JJ, which serves it, belongs to the third stratum; it was covered by two lines of bricks laid pent-wise above it, and, like one of the drains inside MM, was lined with gypsum and lime plaster.

Minor antiquities from second and third strata.

The minor objects in the débris of these trenches belonged largely to the same classes as those found throughout the rest of the site, comprising the following:—engraved seals; plain and painted potsherds; figurines; cones and balls of terra-cotta; beads of copper, faience, ivory, bone, shell, stone, and terra-cotta; pieces of copper implements; chert flakes and cores and the like. These objects are dealt with in the later chapters of this work, and only a few need be noticed here. Among them the following belong to the second and third strata respectively.

Second Stratum.

(*a*) Miniature figure of a frog roughly cut out of shell, 1·6 in. long (Dm. 95). From Room 63 of building MM, 4 ft. 6 in. below the earliest Buddhist pavement (Pl. XCVI, 15).

(*b*) White steatite seal, ·95 in. square (Dm. 56). From north side of stūpa; 4 ft. 7 in. below earliest Buddhist pavement (Pl. CVIII, 158).

Third Stratum.

(*c*) Miniature figure of ram, of yellow faience paste, from which most of the glaze has disappeared. 1·6 in. long (Dm. 103). From Room 63 of building MM, 7 feet below lowest Buddhist pavement (Pl. XCVII, 6).

(*d*) Broken white steatite seal, 1·4 in. square (Dm. 189). From lane on north side of stūpa; 9 feet below Buddhist pavement (Pl. CV, 57).

(*e*) White steatite seal (Dm. 72). From lane on north side of stūpa court; 9 feet below Buddhist pavement (Pl. CXII, 390).

(*f*) Fragment of steatite seal (Dm. 121). From lane on north side of stūpa court; 7 feet below Buddhist pavement.

(*g*) Oblong white steatite seal 2·1 × 0·65 in.; holed for suspension (Dm. 255). From trench outside north-west corner of stūpa; 8 feet below Buddhist pavement (Pl. CXII, 406).

The following may have belonged to either the second or the third stratum. It was found on the north side of the stūpa court, 6 feet below the Buddhist pavement, in débris where all traces of the second floor level had been destroyed:—

(*h*) White steatite seal, 1·1 in. square (Pl. CVII, 116).

Fourth stratum. To the fourth (? Intermediate I) stratum belong the range of Chambers 77 to 80 at the north-west corner of the monastery, some fragments of walling a little to the north of them, a single wall running east and west beneath Room 64 on the east side of the stūpa, and two other walls which lie beneath Room 8*a* in building K. The first of these remains, viz. the Chambers 77 to 80, were repaired and added to in the succeeding period and to this later period belongs the pavement in Chamber 78.

Fifth stratum. The Fifth (? Intermediate II) Period is represented in these cuttings only by sections of two walls, viz. one running east and west beneath Chamber 63 near the south-east corner of the stūpa, at a depth of 13 to 17 feet below the Buddhist pavement (cf. Section GH on Pl. XVIII); the other also running east and west, through 81 and 82, beneath the north-west extension of the monastery. The latter is a massive and finely built piece of walling, nearly 7 feet thick, pierced by an opening and provided on its southern face with an offset. It is probably coeval with the Great Bath, and, when followed up, it will doubtless be found to belong to a building of importance. From this or possibly the preceding (6th) level comes an ash-coloured steatite seal (Dm. 135), 1·4 in. square, which was found 17 ft. 6 in. below the earliest Buddhist pavement at the S.E. corner of the Stūpa Court. It bears the usual figure of a unicorn with a legend above, and is in no way different from the seals emanating from the higher levels (Pl. CXV, 555).

Sixth and seventh strata. To the Sixth (? Intermediate III) Period two small fragments of walling appertain—the one on the north side and partly beneath the massive wall of the Fifth Period just alluded to, and the other near the north-west corner of the stūpa. The Seventh (? Early I) Period, which is the earliest yet reached in this part of the site, is represented only by the low wall and adjacent pavement in the deep trench outside the north-west corner of the monastery, a photograph of which appears in Pl. XIX, *a*. The potsherds, etc., found at this level included nothing worthy of particular remark, and were in all respects similar to those unearthed at higher levels.

NOTE ON THE COPPER COINS FROM STŪPA AREA

By N. G. Majumdar, M.A.

In Pl. CXLIII (Nos. 1–26) are illustrated some selected specimens of the copper coins discovered by Mr. R. D. Banerji in 1922–3, in chambers around the stūpa.[1] The coins, which are over 2,000 in number, may be broadly classified as follows: (i) 338 coins of the Kushān king Vāsudeva I, bearing the standing royal figure on the obverse and the figure of Śiva and the bull, or a throned goddess, on the reverse; (ii) 1,823 rectangular, or oblong, coins bearing a nimbate figure, the cross, trident, series of pellets, etc., on one side or the other, but without any legends; (iii) 9 oblong or circular pieces with the device of the fire-altar on one side and a crude human figure on the other, and similarly without legends. There are only a few which do not appertain to any of the aforesaid classes, e.g. No. 20 and the coin of an Indo-Greek king. The latter, it may be observed, is the only one of its kind amongst the Mohenjo-daro coins and seems to be the earliest of the lot, although on account of extreme corrosion it is difficult to assign it to any particular king. Mr. Banerji states[2] that in 1922–3 he discovered at the site "four thick oblong copper coins inscribed with pictographs". But there is nothing to show that these and other similar pieces discovered since then were actually intended to be used as money and not as amulets.

[1] *ASR.* 1922–3, p. 103.

[2] *Ibid.*, p. 103.

Of the three classes of coins mentioned above, No. ii is the most important, as none of this type has so far been described by numismatists. These coins are cast and not die-struck, and are specimens of the indigenous currency of Sind. Out of the lot of 1,823 coins as many as 1,684 were found inside a pottery vessel in Chamber No. 34, on the west side of the Stūpa. Among the rest some were found mixed up, according to Mr. Banerji, with coins of Vāsudeva I, for whom the generally accepted date is *c.* 185–220 A.D., 3 in. below the level of the Buddhist pavement in Chamber No. 35. This circumstance, however, does not necessarily [1] indicate that coins of class ii were current along with those of Vāsudeva I. On the contrary, the former afford some clear indications showing that they belong to a much later date. On most of them there occurs a nimbate figure dressed in a type of garment that we find worn by royal figures on the coins of Kushān kings, later than Vāsudeva I.[2] A point in their drapery which is particularly to be noted is that the lower edge of the garment, as it falls on the legs, takes the shape of a bow-like curve. A reference to the published plates of Kushān coins will show that this feature is absent in the earlier issues, for instance, those of the two Kadphises, Kanishka I, Huvishka, and Vāsudeva I, which invariably present the straight-edged garment.[3] No doubt, on the coins under review the execution of the figure is much cruder and more degraded, and the human form and dress are extremely stylized, but their affinity with the later series of coins is unmistakable. A figure in the Kushān dress[4] exactly similar to that on the Mohenjo-daro coins occurs on a piece illustrated by Cunningham (CMI., pl. vi, 1). This bears a few letters which cannot be earlier than the fifth century A.D.

In most of the coins, as also on some of the Kushān issues, there is seen a trident close to the nimbate figure. Mr. Banerji suggests that the figure represents Buddha. But this view is untenable, since Buddha is never depicted in the dress of a Kushān king on the coins or elsewhere, nor can the trident be associated in any way with his representations. On the coins the trident is either held by the king or placed in close proximity to his figure. This being so, there can be little doubt that the nimbate figure stands for the king. The nimbus around the king's head shows that these coins must be placed later than the time of the Kadphises kings, who are represented on their coins without this mark of divinity. An interesting clue is supplied also by the excavations at Jhukar (1927–8), in which sealings with characters of about the fifth century A.D. were found associated with coins belonging to the same type as class ii of Mohenjo-daro.

Coins of class iii present two features which also possess some chronological significance: *first*, the well-known fire-altar which occurs on the coins of the Kidāra Kushāns, the Ephthalites and the Sasanians,[5] who are all later than Vāsudeva I; *secondly*, the crude

[1] It is noteworthy that during the excavations of 1927–8 *in the Stūpa section* we unearthed a hoard of about 1,100 copper coins, which are all of Vāsudeva and do not include a single specimen of coins of class ii. The references concerning Mr. Banerji's remarks, here and below, are to his unpublished report on Mohenjo-daro excavations submitted to the Director-General of Archæology in India

[2] Smith's *Catalogue of Coins in the Indian Museum*, vol i, pl. xiv, figs 1–11; Cunningham, *Later Indo-Scythians*, pl. i, figs. 2–18; and pl. ii, figs 1–10, 12–13.

[3] Cunningham, *Coins of the Indo-Scythians*, pl xv, 9, 11, 12, 13, and pl xvi, 1–6; Smith, *Catalogue of Coins in the Indian Museum*, pl. xii, 1, 3, and pl. xiii, 8–10 The straight-edged garment is found also in the statue of Kanishka from Mathurā, *ASR*. 1911–12, pl liii

[4] Cf also coins discovered at Taxila bearing *human* figures imitated from Kushān design, but of a much cruder type. *ASR*. 1914–15, p 34, Nos 41–4.

[5] Cunningham, *Later Indo-Scythians*, pl vi, 1; pl vii, 2, and pl. iv, 9.

human figure, recalling that found on the so-called "Puri-Kushān" coins, which, according to Vincent Smith,[1] belong to the fourth or fifth century A.D.

The majority of coins from the Stūpa site being thus either contemporaneous with Vāsudeva or demonstrably later in date, it is reasonable to conclude that the Buddhists occupied Mohenjo-daro about the beginning of the third century A.D. and held it till the fifth century A.D., which is the approximate date assignable to coins of class ii mentioned above. In this connection it may be relevant to note that a number of potsherds bearing Brāhmī inscriptions were discovered by Mr. Banerji and subsequent excavators in chambers around the Stūpa and amidst the loose debris covering the surface of the Bath area, at its north-western corner. The writing exhibits features which are typically Kushān, but the palæography of this period is not yet sufficiently established to enable us to determine whether the inscriptions are Early or Late Kushān in date.

It will be seen that on coins of class ii many of the devices are cut away and are consequently incomplete. Evidently the local moneyers started from a cast copper sheet which was made into a number of strips. The desired weight and size were next obtained by cutting these strips into separate pieces. In this process they were necessarily obliged to cut away many of the devices which were intended to be borne by each individual coin. Thus in the manufacture of these coins the moneyers of Sind seemed to have followed practically the same method as that adopted in the case of the earliest Indian coinage.[2] The rectangular cast coins dealt with here vary in weight between 1·18 and 1·99 grammes. There is only one coin (No. 11) which weighs less than a gramme, being ·935. No. 21, which differs in point of shape, etc., from the rest, weighs 2·215 grammes.

I give below a brief description of the individual coins illustrated in Plate CLXIII.

S. No.	Weight in grammes.	Size in inches.	Obverse.	Reverse.
1	1·52	·55	Upper part of standing nimbate figure with trident to right.	Part of nimbate figure.
2	1·735	·55	Do.	Only the nimbus of a figure with cross above.
3	1·845	·50	Do	Two lines of pellets across the field.
4	1·575	·55	Standing nimbate figure with portion of legs and left hand cut away; cross to the left of the nimbus.	Do.
5	1·80	·65	Upper part of nimbate figure; no trace of trident mark.	Pellets.
6	1·76	·65	Standing figure, head cut away; portion of trident to the right.	Devices not clear.
7	1·435	·65	Standing nimbate figure, head partly cut away, no trident visible.	Pellets.
8	1·515	·70	Head of standing figure gone; no trident visible.	Traces of pellets.
9	1·18	·55	Do.	Cross and pellets.
10	1·485	·65	Do.	Traces of pellets.
11	·935	·55	Cross below a line of pellets; portions of nimbus at two corners.	Pellets.

[1] *Catalogue of Coins in the Indian Museum*, vol. i, p. 92.

[2] Cf. Smith, op. cit., p. 314; and Bhandarkar, *Lectures on Ancient Indian Numismatics*, p. 150.

S. No.	Weight in grammes.	Size in inches.	Obverse.	Reverse.
12	1·195	·50	Cross in the middle and portions of nimbus at two corners.	Series of pellets.
13	1·64	·55	Do.	Two crosses and portion of nimbate head.
14	1·49	·60	Cross below a line of pellets.	Elliptic device.
15	1·64	·60	Cross below two parallel lines of pellets; part of nimbus at the lower left corner	Two lines of pellets.
16	1·62	·60	Cross above portion of nimbus; a second cross at the lower right corner	Lines of pellets.
17	1·99	·70	Portion of nimbate head and trident, which is to the left, below a line of pellets	Irregular lines of pellets.
18	2·71	·80	Crude human figure.	Fire-altar.
19	3·81	·85	Do.	Do
20	1·99	·70	Horseman to right (partly defaced)	Human figure (partly defaced).
21	2·215	·80	Bull with trident at the side; line of pellets to the left of trident	Trident and line of pellets.
			COINS OF VĀSUDEVA I	
22	8·455	1·30	King to left with usual drapery and sword at his side, making an offering with right hand placed over an altar; a long staff-like object, which may be the trident, in left hand; Greek legends effaced	Two armed Śiva with trident standing behind him, bull standing to left.
23	8·88	1·30	Do	Do.
24	5·46	1·30	Do	Do.
25	6·51	1·30	Do	Do.
26	7·63	1·10	Do.	Goddess seated on throne.

NOTE—These coins are in a very poor condition For Nos 22–5 cf Whitehead, *Catalogue of Coins in the Lahore Museum*, vol. i, pl. xix, 209, and for No. 26, *ibid*, pl xix, 228.

Chapter X

SD AREA

THE GREAT BATH AND ADJACENT BUILDINGS

The Great Bath.

IN the Stūpa Area the most interesting feature is the large bath on the west, separated from the Stūpa by a distance of roughly 190 feet. Its plan and sections are shown on Pls. XXII and XXIII, with which may be compared also the projection drawing in Pl. VII.

This bath, which belongs to the Intermediate Period,[1] was cleared in 1925–6 under the direction of Sir John Marshall, and in size and conception is the most elaborate structure that has up to the present been found in any part of Mohenjo-daro.

It is constructed of specially cut bricks of varying sizes ranging from 10·15 × 5·1 × 2·2 in. to 11 × 5·15 × 2·25 in. It is evident that the bricks, which in the first place were moulded, were not cut down to a definite size ; they vary particularly in length and breadth.

Dimensions.

The dimensions of the bath are : west side, 39 ft. 4 in. long ; east side, 39 ft. 3 in. long. Its breadth at the south is 22 ft. 11 in., and at the north 23 ft. 4½ in. There is, therefore, a difference of 5½ inches in the width of the two ends, and of 1 inch only in the length of the two sides. This is a relatively accurate lay-out for brickwork, and the slight discrepancy is amply atoned for by the very careful finish of the masonry—a finish so good that the writer has not seen its equal in any ancient work.[2]

Architectural features.

At either end of the bath is a raised platform (32 and 34) (Pls. VIII, XXI, *b*, and XXV, *d*), extending its whole width. Each platform is 3 ft. 3½ in. wide, and stands 1 ft. 4 in. above the floor of the tank ; and leading down to each is a well-constructed flight of steps, of which the northern one is 8 feet wide and the southern one 7 ft. 10½ in. wide.

The northern flight of steps is the better preserved, nine treads in all remaining, whose average rise is 8·6 inches and width 9·25 inches. The southern flight has suffered greatly from the action of salt, but nine treads still remain out of the original ten (Pl. XXVI, *a*).

The floor of the bath is of bricks of the same size as those of its walls and stairways. All are carefully laid on edge with their axes running north to south. The thickness of the paving has not been ascertained, as this could not have been done without damaging it ; but by analogy with the bathrooms found in private houses, it is probably very thick, both for the sake of strength and to prevent water from percolating through it.

Drainage.

At the south-western corner of the bath, towards which the pavement gently slopes, there is a square hole in the western wall measuring 9 inches wide, by 6¾ inches high, to provide

[1] See *supra*, pp. 24–6.

[2] It calls to mind the fineness of the brickwork in mediaeval Indian and Burmese buildings, e.g. at Sārnāth and Pagān.—[Ed.]

an outlet for the water. This hole drops another 2½ inches immediately inside the face of the wall, and it was probably plugged from the inside with a block of wood (Pl. XXI, *b*).[1] The differences of level in the various corners of the tank were well thought out. They are given further on in this chapter.

Watertight backing.

The thickness of the walls of the tank is uniformly 4 ft. 5½ in. An interesting feature of the walls, which was first observed on the eastern side, was subsequently found to extend all round. A thick layer of bitumen, averaging 1 inch in thickness, was applied to the outside of the walls; and, presumably to prevent the bitumen from creeping, a thin retaining wall, one brick or 11 inches in thickness, was built against it (Pl. XXV, *d*). Behind this retaining wall and between it and another wall, a filling of clay, 21 inches thick, was rammed.[2] The structure of the walls was the same on all four sides of the tank, and also at the corners that turn in towards the stairways.

Masonry.

Cement.

Masonry.—Despite the slight inaccuracy of the lay-out of the tank, its masonry, as stated above, is remarkably good. The bricks forming the inner faces of the walls are laid in alternate headers and stretchers, the joints being exceedingly fine and quite equal to those of modern work. Indeed, it would be impossible to insert even a visiting card between the bricks. The cement used is white in colour and composed of fine sand mixed with a large proportion of gypsum and a smaller amount of lime.[3] It is now in a very powdery condition, and would long since have been washed out, unless the bricks had been set very close together. The analysis of this cement made by Mr. Muh. Sana Ullah, the Archæological Chemist, is as follows :—

Gypsum . . .	43·75	per cent.
Carbonate of Lime	13·78	" "
Sand	40·00	" "
Alkaline Salts . . .	2·47	" "
Total . .	100·00	" "

The hearting of the walls appears to have been as carefully laid as the faces, although not always in alternate headers and stretchers. One course, for instance, was all headers, while in the one above or below it the bricks were laid in the following order: stretchers, headers, headers, headers, stretchers. The facing of brick that was added to keep the bitumen plaster from creeping, was laid as headers throughout.

Bricks specially trimmed.

The bricks were extraordinarily well made with perfectly plane faces and sharp edges. Such bricks as these could hardly have been made in an open mould, or, if so, they must have been trimmed down afterwards. The smoothness of the brickwork is not confined to the exposed faces only, but extends to those parts of it that were necessarily hidden. Certain striations on the bricks suggest that they were first trimmed with a saw[4] or other implement and then very carefully rubbed down, a practice which obtains in modern times.

In the quoins on each side of the stairways, closers were used to afford proper breaking of the joints. These closers are 2·45 inches wide, or exactly half the width of a header. The perpends are in consequence exceedingly regular and quite up to modern standards of brickwork. The horizontal courses are not quite so good, there being a considerable

[1] This hole can only just be seen in the photograph.
[2] The space for this clay filling may be seen on the left of Plates VIII and XXI, *b*.
[3] The lime may have been found in combination with the gypsum, not intentionally added to it.—[ED.]
[4] See, however, p. 16, footnote 1.—[ED.]

variation in level. The brickwork on the eastern side of the tank was carefully examined for any defect of this kind, and it was found that there was a variation of 7 inches in the whole length of one course and of 6 inches in another. This may be due to settlement, of which there are also other indications.

To lay a course perfectly true without the aid of a level of some kind is a very difficult task, and the masons who built the bath could hardly have had such an apparatus. In Egypt the square was employed for this purpose in very early times.[1] Whether the same instrument was in use in Mesopotamia, we know too little about the masonry of that country to decide.

Stairways. *The Stairs.*—A curious feature of the two stairways leading down into the bath is the presence of a channel 9·25 inches wide and 3·25 inches deep, running parallel with and at the base of the lowest step of each. This channel penetrates into the two sides of each stairway for a distance of 3·5 inches.

Wooden treads. At either end of each tread there is a recess of the same width as the tread and 3·25 inches high and deep (Pl. XXVI, *a*). Traces of bitumen were found in most of these holes, and it is probable, therefore, that the treads were covered with wood, which was fixed into the sides of the stairways with a bituminous cement. Corroborative evidence is supplied by the arrangement of the bricks in some of the steps. They are laid stretcher-wise along the edge of the step, and without further protection would quickly have become detached when the mortar uniting them had once been sodden with water. Why the bricks of the treads were not laid as headers with one end securely fastened beneath the bricks of the step above, is not apparent. Each brick is 10·35 inches long, and the treads 9·25 inches wide; so that there would have been a margin of 1·1 inches, just sufficient for insertion in the step above.

That the covering of wood for the steps was contemplated from the first is evidenced by the holes at either end and the channel for timber at the base being part of the original design and not cut later. Obviously, it was thought that, as the wood was to protect them, there was little need of care in laying the bricks beneath. Let it be added that it is not unlikely that the wood was overlaid with copper. **Objects found.** The following objects were found in the débris that lay in this tank: badly corroded copper chisel (SD 2052); steatite spacer (SD 1963) illustrated in Pl. CXLVII, 5; heart-shaped piece of faience inlay (SD 1535) illustrated in Pl. CLV, 43; and a shell rosette (SD 2375) pictured in Pl. CLV, 37.

The drain. *The Drain.*—The drain at the south-west corner of the bath is separated by a space of 5 inches only from the northern face of the southern platform. It runs through the western wall of the tank which is 4 ft. 7½ in. thick, then through a thickness of 1 ft. 8 in. of clay filling, and afterwards through a second wall, 3 ft. 11½ in. thick, beyond which it enters a chamber (36) (Pl. XXIV, *a* and *c*) measuring 22 ft. 4 in. long E.–W. by 5 ft. 7 in. wide N.–S. There it becomes an open channel in the floor, 1 ft. 6 in. wide and 4–4·5 inches deep. The sides and floor of this channel are of burnt bricks carefully laid lengthways in a very fine gypsum and sand cement. **Corbelled passage.** At the western end of the chamber the channel widens to 2 ft. 3 in. and then enters a long passage (37) (Pl. XXIV, *a* and *b*), 2 ft. 4 in. wide, with a corbelled roof, which is high enough to allow a tall man to walk through without stooping. The exact height is 6·8 feet from the floor to the top of the arch and 5·7 feet to the spring of the arch.

The pavement of this passage as well as of the chamber is of well-made bricks, of the same size as those used in the tank, laid on edge with their lengths running the same way as the axes of chamber and passage. After leaving the chamber the corbelled passage makes a graceful curve to the north, and then after travelling northwards for some 35 feet, curves

[1] In combination with a plumb-bob.

once more to the west. From this point the drain awaits further excavation.[1] It should be noted that from the beginning of the first curve the drain gradually draws away from the western wall of the bath (Pl. XXII).

Roof of drainage chamber. That the Chamber 36 was covered with a flat timbered roof is clear from the holes that still exist, one opposite another, in the side walls of the chamber and which were obviously designed to take square wooden beams. These beam-holes average 12 inches high by 9 inches wide and 13 inches deep. They are not at equal distances from one another, but set in pairs at a distance of 3 ft. 2 in. apart, with a space of 8 ft. 4 in. between the pairs. The bases of the beam-holes are 6 ft. 3 in. above the floor level.[2] Two of these beam-holes can just be seen in Pl. XXIV, *a*.

Man-hole. At the western end of Chamber 36 is a man-hole, 2 ft. 3 in. wide by 3 ft. 7 in. long, of sufficient size to allow a man to descend into the chamber and vaulted passage (37). The walls of this man-hole still stand considerably higher than the roof of the passage (Pl. XXIV, *a*), but the eastern side of it has disappeared, probably owing to its having rested on one of the roof beams of Chamber 36.

Masonry. *Masonry of Corbelled Passage* 37.—The masonry of the walls and roof of the passage is rough, ordinary bricks measuring 11 × 5½ × 2¾ inches being used in its construction, set as alternate headers and stretchers in gypsum cement. The corbelled roof was constructed of seven courses, whose overlap is somewhat irregular, as may be seen in Pl. XXIV, *b*.

The masonry of the floor of the passage is superior to that of the walls and roof. The bricks are of the same kind as those used in the bath, and are laid on edge with their axes running in the same direction as the passage. These floor-bricks are laid only in mud cement and are covered with a heavy deposit of salt.

Levels. *Levels of Bath and Drain.*—Levels were carefully taken, especially of the floor of the bath, to ascertain the accuracy of its setting. These are given below and show the height of each corner above the lowest portion of the floor, i.e. that immediately adjacent to the drain-hole in the S.W. corner :—

N.E. Corner.	N.W. Corner.	S.E. Corner.	S.W. Corner
8 in.	8½ in.	4 in.	0 in.

Despite the fact that the floor of the bath has settled slightly, the falls to which it was laid still suffice to empty it.[3]

The platforms just above the floor at the northern and southern ends of the bath were also carefully levelled. In the case of the southern one it was found that it definitely sloped downwards towards the western end, which is 0·35 feet below the eastern end. The eastern end of the northern platform, however, was found to be one inch below the western end, thus allowing the water to drain into the N.E. corner of the pavement.

The steps of the northern stairway are in a better state of preservation than those at the south. Their average height is 8 ft. 6 in.

The bottom of the channel at the eastern end of Chamber 36 is 6·5 inches lower than the south-western corner of the tank, this drop occurring in a distance of 10 feet. The channel drops another 3 inches in the length of the chamber and there is another drop of 3·5 inches in that part of the passage where the corbelled roof is still in position.

[1] Since writing, the passage has been completely cleared and proves to have again changed its course. After travelling in a north-westerly direction for a little way it disappears owing to the depredations of brick-robbers. We shall probably never know where it led to.

[2] 1·85 feet below datum level.

[3] The rainwater that now runs into this bath still drains away through the corbelled passage to the outside of the mound.

At the point where the roof is broken away, the drain is 13 inches below the floor of the bath.[1]

Foundation enclosure wall.

It will be seen from the plan on Pl. XXII that the inner walls of the bath stand within another rectangular enclosure, whose walls are 3 ft. 8 in. thick. The intervening space, 1 ft. 8 in., between these outer walls and the walls of the bath was filled in with a mud filling, so as to make a very thick composite wall. In the angles formed by the recessing of the four corners of the inner wall, brick piers were built (28, 29, 30, and 31)—one of which may be seen in the left-hand corner of Pl. XXI, *b*.[2] It was probably thought that to fill in comparatively large spaces like these with a clay filling only, would lead to a settlement of whatever was built over them. On the other hand, it has been suggested that these piers may have been intended to support some ornamental features, such as columns or statues.

Objects found.

In the clay filling between the two northern piers were found: a large faience disc-shaped bead (SD 1885) at a level of 4 feet below the surface of the ground and a spindle-whorl, also made of faience (SD 1894), at a depth of 6 feet below the surface of the ground. The first is illustrated in Pl. CXLVI, 20, and the second in Pl. CLVII, 41.

Fenestrated walls.

The walls so far described are enclosed by yet another series of walls, 3 ft. 6 in. thick and separated from them by a distance of 6 feet on the south, east, and west, and of 2 ft. 8 in. on the north. The upper parts of these walls are preserved to a certain height at the northern and southern ends, both ends being provided with six apertures (Pl. VIII and XXI, *b*). These apertures, except one which was used as a doorway, were at a later date partially filled in and served as windows. Cross-walls, more or less regularly placed, form a series of cells in the intermediate space which were filled up with a mud filling.[3]

Platform round bath supported on mud-filled masonry cells.

The cross-walls at the northern end are two in number and somewhat centrally situated. The arrangement is the same at the southern end, but here the cross-walls are considerably thicker and the space between the walls narrower. On the east there are no less than four very substantial cross-walls, but, unfortunately, those on the west have been very badly

[1] To facilitate a comparison of these levels with those of other parts of the site, the top of the well immediately to the east of the tank (Chamber 16) was used as our datum level. The present top of this well is 168·1 feet above mean sea-level. To this datum level various points in the bath and drain are referred below:—

N.W. Corner of Stūpa Courtyard	31 feet above datum.
S.W. Pavement of Bath	7·6 feet below datum.
Landing at top of Northern Stair	1 foot above datum.
Corners of Bath Walls—	
S.E. Corner	7·9 feet above datum.
S.W. Corner	7·3 feet above datum.
N.E. Corner	8·1 feet above datum.
N.W. Corner	8·4 feet above datum.
Bases of beam-holes in Chamber 36	1·8 feet below datum.
Height of walls of Chamber 36	0·3 feet above datum.
Base of channel of drain at eastern end of Chamber 36	8·3 feet below datum.
Floor of eastern end of corbelled passage	8·6 feet below datum.
Spring of arch at this point	2·9 feet below datum.
Top of arch at this point	1·8 feet below datum.

The average level of the top of the masonry of the chambers on either side of the well is 0·6 feet above the datum level; that of their foundations is 4·1 feet below datum.

[2] These average in size 5 ft. 6 in. long E.–W. by 3 ft. 6 in. wide N.–S.

[3] This system of forming a platform is known in Egypt and Mesopotamia in all periods and is equally common in India.

damaged, owing to this portion of the building having been used as a quarry. What few indications of cross-walls remain here seem to agree in their arrangement with those on the opposite side of the bath, except that to accommodate the drain the northern wall of Chamber 36 was a necessary addition.

Objects from foundation cells.

As one would expect, but few antiquities were contained in the cells formed by these cross-walls. In the northern cell on the eastern side there was unearthed a steatite seal (SD 2172) bearing an unusual device. This came from a level of 2 ft. 10 in. below the surface and it is illustrated in Pl. CXII, 385. On the same side but in the fourth cell from the north there was found a faience spindle-whorl (SD 1231) at a level of 6 feet below the surface, which is pictured in Pl. CLVII, 47. Associated with this whorl was the fragment of faience of tubular construction, illustrated in Pl. CLVII, 46. There was also found in the western cell on the southern side of the bath a fragment of a faience vessel (SD 717) at a level of 4 ft. 10 in. below the surface. This last piece is shown in Pl. CLVII, 26.

Consolidated as all these walls are with mud filling, they would seem to have supported an ambulatory around the bath of the width of 15 feet or so. The outermost of the three walls surrounding the bath supports a fenestrated wall overlooking this portion. Assuming that the apertures in this wall on the eastern and western sides were of the same size as those on the north and south, as seems probable in view of the preservation of the two that still remain at the southern end of the western wall, there would have been nine on either side. It is possible, of course, that the middle one of the three walls surrounding the bath also had a series of apertures, though no trace now remains of them.

Fenestrations.

The apertures in the fenestrated wall average 5 ft. 4 in. wide, and each is now rebated on the inside by additions of later work. In the original plan it was evidently intended to make in all six apertures in the southern wall. But in the course of alterations at a later period one of the openings was blocked up in order to provide a jamb for a doorway (9) between two chambers (8 and 10) beyond (Pl. XXVIII, *d*). This was done when the openings were narrowed, as is proved by the blocking being bonded with the jambs.

The middle pier at the south end between Chambers 35 and 10 has disappeared; what remains of the sills on either side is late work. The piers on each side of it were narrowed to 4 ft. 1 in. in width by the addition of either a single layer of bricks on each side or of two layers on one side. The fourth aperture at the eastern end of the row appears to have been similarly treated, but some of the added bricks were subsequently removed. From the careful way in which it was carried out, this narrowing of the apertures appears to have been done soon after the erection of the buildings. Two of the windows in the northern fenestrated wall and also the two windows that remain on the west of the bath were narrowed in similar fashion.

All the apertures are 3 ft. 6 in. deep, their added rebates being 10½ inches deep and 6 inches wide. Their present sills, which, I repeat, are later additions, average on the south 1 ft. 3 in., and on the north 1 ft. 10 in., above the pavement of the ambulatory.[1]

Enclosure Wall.—The massive wall that encloses the bath and its surrounding chambers has a batter on the outer side of six degrees from the vertical and a narrow footing at its base. The inner face of the wall is vertical. On the east and south the thickness of the wall is the same, i.e. 6 ft. 3 in. On the west, however, the wall is considerably thicker, measuring 7 ft. 3 in., and a portion on the north, excluding the added walling, is 7 ft. 8 in. thick. Why

[1] This pavement is 1 foot above datum level. The original height of the sills was 2 inches below datum.

there should be these divergences in width it is difficult to say, unless the foundations of earlier buildings were utilized.[1]

Both the great enclosure wall and the rooms inside it were built on foundations of crude brick, as is seen in a deep cutting outside the S.E. corner of the wall as well as in other cuttings within the building.

Entrances to Great Bath building. There appear to have been six entrances in the great enclosing wall of the bath, two of which are on the south, three on the east,[2] and one on the north. It is possible that there was also a doorway in the western wall, but both the wall and the apartments immediately within it have almost entirely disappeared, and we have no means of determining their precise arrangement.

The two doorways (1 and 2) in the southern wall are well preserved. The eastern one (2) was not originally of the size shown in the plan; it was enlarged in the course of alterations at a considerably later period, as is shown by the fact that the existing jambs are built of very inferior masonry, some of the re-used bricks being placed on edge. A drain of a later period was actually laid above the western jamb of this doorway.[3]

The entrance (1) near the western end of the southern wall, which is here 6 ft. 4 in. thick, is 8 ft. 8 in. wide.[4] The western jamb is by no means well defined, and it is probable that the doorway was originally very much narrower than it now is.

On the northern side of the enclosure wall there is a small entrance 3 ft. 10½ in. wide, which was partially blocked up in later times. A portion of it was found to be well paved with a floor 6½ inches thick, consisting of three courses of cut brick surrounded by a wainscot of brick 3½ inches high and 2½ inches thick. The doorway was actually blocked up by the building of a later wall parallel to the northern face of the enclosure wall.[5] The outer or northern face of this later wall is built with a slight batter of about 5 degrees from the vertical; its N.E. corner is illustrated in Pl. LXXVI, *c*. Its southern face is rough and uneven, and was never intended to be seen. The narrow space between the two walls must, therefore, have been filled in with either clay or rubble, so as to form a very thick composite mass, the purpose of which was presumably to enlarge the area of the building. The addition is certainly of later date, as its foundations are higher than those of the wall it masks. This, however, is to be expected, and no considerable space of time need necessarily have elapsed between the building of the two walls. **Later wall parallel with and outside northern wall.**

Drain covering of stone blocks. Outside this composite wall there is an important drain, 10 inches wide, with brick sides and covered in with stone blocks averaging 1 ft. 6 in. long by 9 inches wide and 4½ inches thick. These stones are rudely cut and dressed and were apparently used simply because of the difficulty of obtaining bricks of sufficient length to span the drain. It was impossible to roof this drain with a corbelled arch owing to the height of a roof of this kind.

[1] The levels of this wall are as follows: Top of N.E. corner of wall, 11 feet above datum. Top of S.E. corner of wall, 8·9 feet above datum. Foundations of S.E. corner of wall, 4·2 feet below datum. Top of S.W. corner of wall, 4·4 feet above datum. Top of footing at S.W. corner of wall, 1·4 feet below datum. Base of footing at S.W. corner of wall, 2·8 feet below datum.

[2] It is doubtful if there was more than one entrance (a very small one in Chamber 16) on the eastern side. The other two apertures referred to by Mr. Mackay do not appear to have been carried through the thickness of the wall. *Vide* Pls. VII and XXII.—[Ed.]

[3] Its present sill is 1 foot above datum level, but is a later addition. The original sill is 0·2 feet above datum.

[4] Sill 0·6 feet above datum level.

[5] Pl. XXV, *a*, shows this entrance with a wall across it in process of excavation. On the north side of the latter are the two funerary vessels referred to on p. 86 above, which appear to have been deposited here after the entrance had been blocked up and the outer parallel wall (which does not appear in the photo) added.—[Ed.]

The buildings to the north of this drain belong to the same period as the bath, but they have as yet been only partially excavated.[1]

Passage 3. *Chambers surrounding Bath: Southern End.*—The western doorway in the southern enclosure wall gives entrance to a passage (3), 11 ft. 8 in. wide, which extends nearly the width of the building. Its floor was covered with a thick paving, of which a considerable portion now remains, but in a ruined condition.[2] About the level of this pavement was found the well-preserved pottery model of a bull (SD 2184), that is illustrated in Pl. XCVII, 22. At the western end of this passage a well-preserved doorway, 3 ft. 11 in. wide, gives access to a small room (4) measuring 10 ft. 11 in. E.–W. by 11 ft. 9½ in. N.–S. Part of the original paving of this room still remains, together with a portion of a horizontal drain.

Chamber 5. At the eastern end of passage 3 a doorway, 4 feet wide, leads into Chamber 5, which is of the same size as the comparion room above described.[3] The cross-wall in which the doorway to Chamber 5 is situated is 4 ft. 7 in. thick, and consists of two portions placed alongside one another. The eastern portion is bonded only in places to the northern and southern walls of the chamber, while the western portion (1 ft. 7½ in. thick) was added slightly later and is not bonded at all except in its upper part. A portion of the original paving of Chamber 5 still remains. Beneath it there is a wall of earlier date. There was found in this chamber the fragment of painted pottery (SD 1759) that is shown in Pl. LXXXVIII, 1. This was at a level of 10 feet below the surface.

On the northern side of passage 3 there are two simple doorways (6 and 7), each measuring 5 ft. 9 in. wide. The corners on the northern sides of these doors show a considerable amount of wear, which was roughly repaired at some later date. These doorways give access to passages 10, 11, and 12, which communicate with one another.

Passage 10. Passage 10 leads by doorway 9[4] into the small compartment 8, measuring 12 feet by 6 ft. 8 in., in whose northern wall there is another doorway, 5 ft. 3 in. wide, which communicates with the area around the bath. This latter doorway is very well preserved and

Objects found. has rebated corners.[5] In the passage west of Chamber 8 were found the steatite seal (SD 570), illustrated in Pl. CVII, 118, and the decorated carnelian bead (SD 1198) shown in Pl. CXLVI, 45. The seal was unearthed at a level of 8 feet, and the bead 5 ft. 5 in. below the surface of the ground.

It should be here noted that the two cross-walls that separate 8, 10, and 11 are slightly later additions; the northern jambs of the doorways through them abut against and form part of the blocking of two of the apertures in the fenestrated wall on this side of the bath. Neither of these walls is bonded with the walls of the passage, which seems originally to have been one long continuous corridor.

Passages 11, 12. In passage 11 there was unearthed from a depth of 10 feet a very fine faience spindle-whorl (SD 1984), exactly like that illustrated in Pl. CLVII, 41, and which was made probably in the same mould. The same passage turns at right-angles towards the north (12), and gives access to Chambers 13, 14, and 15 on its eastern side. Walls have been exposed below the pavement level of Chamber 13, the western wall of which is very badly damaged, and the doorway in the south-west corner can only just be traced. Here was found, at a level

[1] See *Annual Report, Archæological Survey of India, 1927–8*, in which an account of the excavation of these buildings is given.

[2] The top of this pavement is 0·4 feet above datum.

[3] These chambers may have been porters' lodges, as each commands a doorway in the enclosure wall.

[4] The sill of this door is 0·2 feet above datum.

[5] Its sill is 0·8 feet above datum, i.e. on practically the same level as the pavement that once lay around the edge of the bath.

of 7 ft. 6 in. below the surface of the ground, the shell rosette (SD 1106) pictured in Pl. CLV, 36.

The doorway of Chamber 14 is blocked up, and a very wide aperture in the eastern wall, 7 ft. ½ in. in breadth, which has been filled in with masonry, may possibly conceal a water-chute. In the blocking of this filled-in aperture is a small drain measuring 7 inches wide and 6½ in. high.[1] A considerable portion of the original paving and part of a thin partition wall still remain.

Water-chute. Chamber 15 has been subdivided by a cross-wall, in which there is a doorway 3 ft. 11 in. wide, an addition made at the same period as, or later than, the walls of the chamber. After the removal of some late brickwork from the eastern wall, the remains of a very large water-chute appeared, measuring 5 ft. 10 in. wide N.–S., by 4 ft. 10 in. deep. This was built of cut bricks measuring 10·75 × 5·5 × 2·5 in. The western side of the chute has a slight batter of about 10 degrees to permit of the easier descent of water from the roof of the tank building. The flat base of the chute was built of bricks carefully laid,[2] and it now communicates with a paved pit measuring 6 ft. 4½ in. long N.–S. by 3 ft. 8 in. wide, which was built at a later date. The base of the pit is 10 inches below the base of the chute.

In the Late Period this chute was no longer in use, and was filled in with broken brick and rubble topped with a coating of brick. At the same time a thin wall of rough masonry was provided to close up the street side, so that a recess or bench might be provided for the chamber to the west of it.

There are traces of an earlier wall, possibly belonging to the Early Period, along the western side of this chamber.

Objects found in Room 15. Two pieces of shell inlay (SD 2214 and 2447) were recovered from this chamber. The first piece was from a depth of 5 feet below the surface and is illustrated in Pl. CLV, 32; the second lay at a level of 6 feet below surface, and is shown in Pl. CLV, 33. There was found as well the faience vessel (SD 2390), to be seen in Pl. CI, 9. This last was 5 feet below the surface.

In passage 12 opposite this chamber (15) were unearthed a large bead of variegated limestone (SD 1399) pictured in Pl. CXLV, 52; and the copper rod (SD 1781) shown in Pl. CXLIII, 32. These were 6 ft. 2 in. and 4 feet below surface, respectively.

Chamber 16. Chamber 16 does not now communicate with passage 12, but a small blocked-up doorway at the southern end of its western side shows that it once did so. The eastern wall of this chamber is difficult to understand. There are traces in the wall of an aperture 7 ft. 2 in. wide, which was and still is blocked up. South of this aperture is a second one, measuring only 2 ft. 4 in. wide, whose sill is 1·25 ft. below that of the other doorway. It would seem likely that the smaller doorway was the original entrance from the chamber to the outside of the building. This probability is borne out by the blocked-up doorway of similar size opposite it that enters passage 12. The higher level[3] of the sill of the larger doorway indicates that it was an alteration of later date which was subsequently closed. This room contains a well, and its first unimposing doorway sufficed for the entrance of the servants, whose duty it was to draw water. This well will be discussed later.

Yet another chamber (17) on this side of the bath could once be entered from the passage 12, but the doorway in its western wall was blocked up at a later date—a point to be noticed more fully anon. A second doorway in the northern wall opens into Chamber 18.

Chamber 24. *Chambers surrounding Bath: Northern End.*—The small doorway in the northern enclosure wall originally gave access to passage 23, which has been destroyed at its western end. The

[1] The base of this drain is 0·2 feet above datum. [2] 0·1 feet above datum. [3] 3·1 feet above datum.

eastern end of the passage is blocked up by a solid mass of masonry, supporting later walls and paving on a kind of platform. This later brickwork entirely conceals the southern side of the entrance doorway, which from its size, however, can hardly have been an important one.

The western portion of the parallel corridor 24 also has been destroyed. This corridor formerly communicated with passage 22 at right angles to it, but when the staircase was built in passage 22 the doorway between the two was blocked up.[1] The bath could then only be reached from corridor 24, through Chambers 25 and 26.

Chamber 25. Both the northern and southern walls of Chamber 25 are fenestrated, but originally they each contained a series of doorways, the sills of which were raised at a later period. In the former there were four apertures averaging 5 ft. 6 in. wide, all of which were blocked up, thus slightly altering the plan in this part of the building. The southern wall of this chamber is now provided with three windows and a doorway, the former measuring 4 feet wide, and the latter 5 ft. 3 in. wide. As in the fenestrated wall on the south of the bath, three of these apertures were subsequently narrowed from 5 ft. 3 in. to 4 feet by additions on either side, and at the same time their sills were raised by about a foot.[2] A portion of the original pavement of Chamber 25 is still intact, and is on the same level as the old sills. At the eastern end of the chamber is a cross-wall provided with a door.[3]

The doorway in the southern wall of Chamber 25, which remained unaltered save for the raising of its sill, communicates with a long narrow chamber (26), itself in communication on its southern side with the area immediately around the bath. Here were found further remains of paving agreeing with the level of the floor of Chamber 25. In this chamber (26) was found the imitation carnelian bead (SD 1998), which is shown in Pl. CLVII, 8. This was found at a level of 8 feet below the surface of the ground.

Passage 22. Passage 22, which is 6 ft. 6 in. wide, is subdivided by a cross-wall in which there is a doorway 4 ft. 7½ in. wide, whose sill is in good preservation.[4] This is clearly a later addition, for the jamb is not bonded with the passage wall. At the southern end this passage formerly gave access to Chamber 18 by a doorway 4 ft. 11 in. wide, which was blocked up at a later period. Chamber 18 was then entered from Chamber 17 by a doorway in its southern wall. This latter chamber was also entered from passage 12, but ceased to be of any use as a chamber after the northern end of the passage was cut off by a cross-wall.

Chamber 18. There is some ground for believing that the doorway in the southern wall of Chamber 18 was cut after the western wall had been blocked up, but owing to its bad state of preservation there can be no certainty on this point. The eastern jamb is still well preserved, but the western jamb has been entirely stripped of its facing, and there is, in consequence, some uncertainty as to its original width. This I have estimated as 4 ft. 4 in. A certain amount of the original pavement of this chamber still remains. A niche set high up in its western wall is a later addition. The only object recovered from this chamber was a slate palette, of a dark-grey colour (SD 2577), which is fully described in the chapter on "Household Objects, etc." This was found lying at a depth of 7 feet below the surface of the ground.

Stairway. At the northern end of passage 22 there is an imposing flight of steps.[5] Eleven treads now remain, each averaging 10 in. wide and 8 inches high. These steps, which are exceptionally well preserved, apparently once led to a second storey and perhaps also to the roof. The height of the roof must have been considerable, as the walls at the N.W.

[1] The sill of this door is 1·8 feet above datum and the top of one of its jambs 8·05 feet above the sill.

[2] The old sills are at a level of 1·5 feet above datum and the later sills 2·5 feet above datum.

[3] The sill of this is 1·4 feet above datum.

[4] 1·6 feet above datum.

[5] Rising from 1·3 to 9·5 feet above datum.

corner of Chamber 19 have been denuded to below the level of the beam-holes.[1] The space to the north of this staircase (21) is entirely filled up with brickwork, evidently to support the upper part of the stairway, which no longer exists. Lying on top of this brickwork was a large fragment of an alabaster dish (SD 2552), of which enough remained to ascertain its original size. This was drawn and is shown in Pl. CI, 31.

Chamber 20. Chamber 20 is difficult to understand. It was subdivided at a later date by a cross-wall which was not bonded with the walls of the chamber. A doorway in this wall gave access to the western half of the chamber. Its original entrance—a small one in the S.W. corner—was at a later date entirely closed in by the building of the stairway to the west of it, and no other entry from this side was provided. This room, therefore, shared the later fate of Chambers 17 and 18; when they were no longer used they were filled up with débris to support other structures. The two niches in the eastern wall of this chamber certainly appear to be blocked up doorways leading into the street. The northern one is 4 ft. 6 in. wide,[2] and the southern 4 ft. 10 in. wide. The partial blocking of these two entrances is of very rough work, and their jambs are surmounted with brickwork equally inferior in quality. It is difficult to understand why two doorways set so close together were required here, unless Chamber 20 was a main entrance and extensively used before the western wall of the chamber and the stairway beyond were erected.

Chamber 19. Chamber 19 was entered from passage 22 by a doorway 4 ft. 9½ in. wide.[3] In the northern portion of this chamber[4] there is a stairway, 4 ft. 7 in. wide, rising from a little platform. The treads are 8 inches high and deep. This stairway possibly led to the floor laid above Chambers 17, 18, and 20.[5]

Bathroom. A cross-wall, 2 ft. 8½ in. thick, divides Chamber 19 into two portions, but it lacks a doorway. The eastern half of the chamber contains the remains of a bath whose pavement is made of bricks measuring 10·65 by 5·5 by 2·25 in. An edging made of bricks placed on edge stands 3 inches high around the bath. The niche in the wall beyond resembles those in the adjoining chamber. Part of it is blocked up with cut bricks of the same kind as those used for the bath, which indicates that the niche was built at the same time as the bath. O pulling away part of this blocking we found that there had formerly been a water-chute set in the thickness of the wall and forming part of the original construction of the building. The chute is 2 ft. 8 in. wide N.–S., and varies from 3 ft. 9 in. to 4 ft. 7 in. in depth, owing to its western side having a slope of about 45 degrees. The cut bricks of which it is made measure 11 inches long by 5½ in. wide by 2½ in. thick. These bricks when set in place were very carefully rubbed down so as to form a smooth surface.

Water-chute in thickness of wall.

In the street outside this chute is a paved brick pit measuring 4 ft. 6½ in. long N.–S. by 3 ft. 8 in. wide E.–W. The walls of this pit, one brick in thickness, stand 2 ft. 8 in. above its paving. It is certain that this pit was built at a later date than the chute, for there is no way for water to escape from it except by a small opening at the top.

In the Late Period the chute was dispensed with and filled up roughly with brick, level with the top of its sloping western side. Its eastern side, at the same time, was closed in with a thin and badly built wall forming a recess in the eastern wall of Chamber 19, 4 ft. 6 in.

[1] They stand at an average height of 9·7 feet above datum.

[2] The level of its sill is 1·0 feet above datum.

[3] Its sill is 1·8 feet and the tops of its jambs 6·1 feet above datum level.

[4] Its pavement is 1·6 feet above datum.

[5] The platform is 1 foot above the paving and there are nine steps.

wide, and 2 ft. 6 in. deep, which may have been used either as a seat or as a bench to hold water-jars for ablution purposes.

Meaning of bath

The Use of the Bath.—That this great bath was used for bathing purposes there can be no doubt, but whether entirely for pleasure or by way of religious ceremony it is at present impossible to say. Judging from the fact that baths are a prominent feature in nearly every house at Mohenjo-daro, it would seem that ablutions played an important part in the lives of the people that once lived there. And a large bath where numbers of people could gather together to bathe would have been to them what their baths were to the Romans in various parts of the world.

That the bath was used by old and young, strong and weak alike, is suggested by the two shallow steps built against the edge of the platform at its northern end (Pl. VIII). This platform is only a little over a foot above the pavement of the bath, but the thought of negotiating a step of this height covered by water would alarm some adults fearful of slipping, as well as children. The existence of these steps is an argument against the use of the bath for keeping sacred animals.

Method of filling.

The method of filling the bath is a problem of considerable interest. As before mentioned, there is a well of large size (6 ft. 2 in. internal diameter) in Chamber 16 east of the bath (Pl. XXV, *b*). This well is lined with wedge-shaped bricks, 11¼ inches long by 2½ inches thick, which are 5¾ inches wide at one end and 4½ inches at the other. Surrounding this well, whose present top is used as our datum level, and separated from it by a distance of 13 inches, there is a circular wall, made of ordinary bricks, whose foundations do not go down very far.

Use of well in Room 16 doubtful.

It is possible that this circular wall built around the well was provided to strengthen its coping. After a narrow door had been blocked up in the western wall of Chamber 16, a doorway which corresponds in size with a second narrow doorway in the eastern wall of the chamber, this apartment seems to have been isolated from the others. There are two outlets for water, averaging in size 1 ft. 3 in. wide by 8 inches high, in the western wall of the chamber, but these appear to be ordinary drain holes, and there is seemingly no outlet for water from these leading into the bath. The writer is of the opinion that the water from this well must have served some other purpose than filling the bath.

Blocks of masonry separated by passages.

Constructions at South-west of Bath Enclosure, Block 2.—There is a very curious burnt brick construction on the west of the bath towards its southern end. As will be seen on the plan (Pl. XXII), the greater part of Block 2 is divided up into a number of rectangular sections, Nos. 1, 2, 3, and 4 of which have been entirely cleared. Each section is a solid block of masonry separated by passages measuring 2 ft. 5 in. wide, whose walls now average 4 ft. 6 in. high (Pl. XXVI, *c*). Some of the sides of these brickwork masses are provided with vertical chases averaging in size 1 foot wide by 9 inches deep. The spaces between the chases average 2 ft. 1 in. in width. Remnants of paving occur in most of the passages, the walls of which now stand in places 4·65 ft. high.[1]

Vertical chases.

It will be noticed that the distribution of the chases is most irregular. The two southern blocks (3 and 4) have ten and six respectively, not more than five on any one face. Block 2 has three chases on each of its northern and southern sides, and Block 1 has none at all. Nor are the chases set exactly opposite one another across the passages; there seems to be no definite relationship between them.

Exploratory shaft.

With the idea of ascertaining if anything lay inside these blocks of masonry, a hole was sunk in No. 3 to a depth of over 15 feet. Solid masonry was met with for over 9 feet, and

[1] The bottoms of the chases and the paving of the passages average 2·5 feet above datum.

below this was a mud filling upon which the bricks rested.[1] The filling found in these passages consisted of ordinary débris, and Sir John Marshall is of the opinion from charcoal found inside the passages and other considerations, that this building, which is of the Intermediate Period, was a hot-air bath, the heat being distributed through the chases, which served as flues, to warm the walls as well as the floors of the building above, which has now disappeared.

Possibly foundations of a hypocaust.

But few antiquities were found in or about these blocks of masonry, and those recovered afford us no clue as to the use of the building. From the passage between Blocks 4 and 2, at a level of 3 feet below the surface, comes the small offerings-stand (SD 2101) that is illustrated in Pl. LXXIX, 8. In the passage west of Block 4 there was found a small faience bead (SD 2508), of cylindrical shape, and lying on the masonry between Block 4 and the bath enclosure wall was the jar-stand (SD 2100) that is shown in Pl. LXXXIII, 53.

Objects found.

To the south of this group of brickwork masses, there is a series of rooms (5), whose foundations have been partially exposed, laying bare the remains of thick walling beneath them. The spaces between the walls below had been filled in with clay and heavy paving laid over this to form a platform, whose present level is very nearly the same as that of the brickwork masses to the north.[2] The interior filling seems to be contemporaneous with the original structure, the whole belonging to the period of the bath.

Series of rooms above remains of important building.

A stairway (7), 3 feet wide, gives access to this platform on the south. Of its steps seven now remain, each 10 inches wide and 8 inches high (Pl. XXIV, *d*).[3] From the level of its foundations it is evident that this stairway is a later addition.

The side of the platform against which this stairway is built has a batter of 5 degrees from the vertical. And on the eastern side of the platform (6), which abuts closely against the western wall of the bath enclosure, there is a similar batter. The present height of this wall, which is no less than 11 ft. 9 in. thick in its upper part, is 10 feet.[4] The great thickness of the walls of this building to the west of the bath certainly augurs some structure quite out of the ordinary.

CONSTRUCTIONS ON SOUTH OF BATH BUILDINGS: BLOCK 3

In a very curious building to the south of the bath enclosure, some of the walls have chases similar to those in the building just described. It is separated from the bath enclosure by a street, 11 feet wide (Pl. XXV, *c*), in which traces of a large drain, which doubtless once ran its entire length, have been discovered near the eastern end.

The wall of the Intermediate Period on the southern side of this street marks a very important building; for its northern face is battered throughout its entire length (Pl. IX). And a deep shaft cut along the face of part of this wall shows that it rests in places on older walling, which its foundations slightly overhang. The bricks of the upper wall measure 12 by 5½ by 3 inches. In the wall below, however, several sizes of bricks occur, namely, 10½ by 4½ by 2½ inches, and 12 by 5½ by 2½ inches. The foundations of the bottom walling have not yet been reached. The level of the base of the upper wall on the southern side of

Important structures with battered walls.

[1] The following are the exact levels: Present surface of brickwork, 6·2 feet above datum. Bottom of masonry, 3·4 feet below datum. Beginning of mud foundations, 3·4 feet below datum. Total depth reached, 9·9 feet below datum.

[2] To be exact, the platform averages 6·9 feet above datum.

[3] What remains of the top of this stairway is 6·4 feet above datum. Its foundations are 6 feet lower.

[4] The foot of this wall is but a little lower than the south-western corner of the great enclosure wall of the bath just opposite it.

the street is 1·2 feet above the wall of the same period on the northern side.[1] The southern wall is considerably higher, presumably owing to the later additions to it on its southern side, which are very considerable and at present prevent us from examining the earlier and more important building beneath.

Objects found. The following antiquities were found in the above street: Seal (SD 2445), illustrated in Pl. CVII, 105, and recovered from a depth of 6 feet below the surface of the ground; seal (SD 2010), shown in Pl. CVI, 100, from a level of 10 feet; and an unfinished stone bead (SD 2325) from a level of 7 feet.

Courtyard 3. Courtyard 3, whose northern portion has been partially destroyed, measures 26 ft. 9 in. N.–S. by 39 ft. 9 in. E.–W. The pavement, which has entirely disappeared, rested on a mass of unburnt brick, filling up and overlaying the chambers and walling of the Intermediate Period beneath. The present walls of this courtyard are of the Late Period, and their foundations do not go below the crude brick filling.[2] They are best preserved at its south-eastern corner, where they stand about 3 feet high.[3]

It would seem that this courtyard was originally open to the sky, for the difficulties of roofing it would have been considerable owing to its great width and length. There may possibly once have been piers or columns in the centre, but of these no traces now remain.

Courtyard 4; chases in walls. Court 4, adjoining Court 3 on the east, measures 26 ft. 9 in. long N.–S. and 25 feet wide E.–W. On the eastern and western walls there are six and five chases respectively, averaging 1 ft. 1 in. wide by 10 inches deep (Pl. XXVI, *b*). On the southern wall there are four chases, set close together and partially blocked by a wall built up against them.[4] The present upper walls of this chamber belong to the Late Period, and their foundations do not descend below the bases of the chases that are in them. The best preserved portion is in the south-eastern corner of the court, which stands 5 ft. 10 in. high.

The floor of Court 4 is partly paved, but this paving is at an average level of some 8 inches below the foot of the walls that surround the court. It is possible that a thicker pavement once existed here, of which the bricks now exposed were the lower courses. Below the portions of pavement that now remain was a clay filling, probably of the Intermediate Period.

Court 4 seems also from its size to have been open to the sky. For some reason or other, the walls on the three sides of it have been strengthened by the addition of facings on the inner side, which are 2 ft. 9 in. thick on the western side, 3 feet thick on the south and 2 feet thick on the east. The foundations of the walls against which the facing walls lie are on the same level as the facings themselves.

In this court was found the well-preserved copper awl (SD 2511) that is illustrated in Pl. CXXXII, 6, and again in Pl. CXLIII, 37. It lay at a level of 3 feet below the surface of the ground.

Brick-robbing. The remainder of this block of buildings is difficult of interpretation, owing to the filling up of the spaces between the walls of the Intermediate Period—filling which has not yet been cleared away. The later structures above served as a quarry for brick, and little now remains save outcrops of walling of the Intermediate Period, which are covered with pavements of the Late Period that have been demolished. Further to the south again there are remains of other buildings (Block 5), which will be dealt with in turn.

[1] The base of the upper southern wall is exactly level with datum.

[2] This filling is of Intermediate date.

[3] The levels of the walls of the corners of the court above datum are as follows: S.E. Corner, Top 12·25 feet; Bottom, 9·1 feet. S.W. Corner, Top 10·7 feet; Bottom, 9·6 feet. N.E. Corner, Top 11·7 feet; Bottom, 8·8 feet.

[4] The average level of the base of each chase is 8·3 feet above datum. This is 8·1 feet above the pavement that ran around the edge of the bath

Block 4.—A solid block of masonry (1) of the Intermediate Period rests on earlier walling and filling, whereas the portion marked 3 in this block represents a mass of mud filling, upon which there is a small amount of later walling. Until the later structures have been removed and this filling cleared away, it is impossible to show upon the plan more than has been done.

Bath. Further to the east is a bath (2) belonging to the Intermediate Period, whose floor is carefully paved with bricks set on edge, exactly as in the pavement of the tank. This floor slopes slightly towards the north.[1] To the south of this bath there is a small staircase, 3 ft. 3 in. wide, whose four remaining treads measure 9 inches wide and 8½ inches high.[2]

Further south, again, a considerable extent of what looks to be rough paving (4) overlies a wall of very considerable thickness, which runs N.–S. at right angles to the great wall described above, on the southern side of the street, and like it has a well-defined batter.

Objects found. Lying upon this rough pavement, at various places along it, were the following objects: A narrow-stemmed pottery jar (SD 2483), illustrated in Pl. LXXXI, 18; a pottery model of a bull (SD 2600) shown in Pl. XCVII, 26; a stone ballista ball (?) (SD 2199) illustrated in Pl. CXXXI, 44; and a glazed steatite ram in a couchant attitude (SD 2278) pictured in Pl. XCVII, 2. All these objects were found at a level of 3 feet below the surface of the ground.

Damage by brick-robbers. *Block* 5.—Block 5 consists of a group of walls which have been badly damaged by brick-robbers. Two distinct levels can be traced here, but only a few unimportant vestiges now remain of the walls of the upper level. The walls of earlier date have also been badly damaged. These were carefully built, and certain features of their remains show that they once formed part of a building of some importance. There seems to have been a passage between the two long thin walls at the south of the block. In the southern wall there is a doorway, 3 ft. 6 in. wide, and an unusually wide entrance, no less than 6 ft. 8 in. in width, nearly faces it in the other wall.[3] The western end of the passage, which is 6 ft. 2¼ in. wide, is blocked by a staircase of which five steps remain, each averaging 9½ inches in width by 10 inches high. The walls of both the upper and lower levels of this Block 5 rest on a clay filling, and they probably belong to the Late Period.

Between two walls on the northern side of this block was unearthed, at a level of 4 feet below the surface, the riveted circular piece of copper illustrated in Pl. CXLIV, 3.

COMPLEX OF BUILDINGS TO SOUTH OF STŪPA AREA

(Pls. XXVII, XXVIII, *c*, XXIX, *a* and *b*)

A considerable number of buildings separated from each other by streets and lanes have been excavated in the southern portion of the stūpa mound, a plan of which may be seen on Pl. XXVII. The terrain here descends more or less abruptly to the south, where a narrow valley cut by rain separates this area from another, Area L, immediately to the south of it. No definite connection has yet been established between the two areas by excavation.

Complex of buildings. *Blocks* 1 *and* 2.—The total extent of this complex of buildings has not been settled, especially to the north-east (Block 2), as much excavation remains to be done. In the north-western section, however, as the plan will show, there is a well-defined street, over 14 feet wide, which is bounded on the west by the great enclosure wall of the bath and on the east

[1] Its average level is 2·7 feet above datum.

[2] The base of this staircase, which now stands 2·3 feet high, is 3·1 feet above datum.

[3] The sills of both doorways are 2·6 feet below datum, which dates them very close to the period when alterations were made to the tank.

by a block of buildings (Block 1) whose outer wall has a slight batter. The walls of these buildings are of considerable thickness and, as the levels show, of Intermediate date. In this street, at a level of 10 feet below the surface, was found the very fine copper spear-head pictured in Pl. CXXXVI, 8. Block 1, since this plan was made, now assumes quite a different aspect. Further excavations made here in 1927–8,[1] proves it to be a single and extensive building extending the whole way along the eastern side of the tank and separated from that building by an important street.

Street along eastern side of bath.

Two drains run down the eastern side of the street, which at its southern end joins the slightly narrower street between the bath enclosure and the buildings south of it. The latter street continues on eastwards with an increased width of 22 ft. 6 in., and finally bifurcates, one portion, averaging 10 ft. 6 in. wide, continuing eastwards along the southern side of Block 1. The other branch, which averages 7 ft. 9 in. in width, runs due south, passing the western sides of Blocks 3 and 6, and owing to a sudden drop in the levels finally peters out.

Street-drains.

Well-constructed drains run down the middle of each of these streets, and that in the street running east to west, i.e. the southern boundary of Block 1, has an average height of 1·2 feet above datum.

From the middle of the street that runs directly to the south comes the curious pottery figure (SD 650) that is pictured in Pl. XCVI, 24. It was found at a depth of 3 feet below the surface.

Parallel street.

The street which runs to the east continues but a short way and then turns at right angles towards the north, along the eastern side of Block 1 and between it and Block 2. Its end, when the plan was made, was lost in the great pile of débris upon which lie the remains of Buddhist buildings.[2] In this street the drains from some of the houses of Blocks 1 and 2 are seen to enter the street drain from either side (Pls. XXIX, *a*; XIX, *b*).

Dating complicated by brick-robbing.

Owing to its having been terraced in the Late Period, the dating of the various parts of this southern complex is a matter of considerable difficulty, which is further complicated by extensive brick-robbing. In addition, this part of the SD Area is encumbered by masses of late paving whose surrounding walls have disappeared. From here the mound now slopes away at a gradient of approximately 40 feet in 300 feet distance, but it is likely that the present slope more or less closely corresponds with that of ancient times. Hence it is not surprising to find traces of walls of the Late Period well to the south of the section now under discussion.

Block 1.—The block of buildings (1), whose walls have been added to at least three times, is enclosed by three of the streets described. The walls are in exceptionally good preservation and stand, as far as we have cleared them on the south, some 8 feet high. The block, as it appeared when the plan was made, consisted of a number of walls of the Late Period which had been denuded down to foundation level. The western portion of the block, however, which had suffered most owing to its proximity to the street, shows the kind of walling that we may expect to find beneath the later additions that still encumber the eastern portion of the block.[3]

[1] *Annual Report, Archæological Survey of India*, 1927–8.

[2] The foundations of these buildings average 21·8 feet above datum. This street has now been completely cleared as well as the building to the west of it.

[3] The tops of the walls at the S.E. and S.W. corners of this block are 8·4 feet and 5·3 feet above datum respectively. Three levels are distinctly shown in the masonry of the S.E. corner. The base of the top wall here is 6·4 above datum. Below this is another wall whose base is 2·9 feet above datum, and below, again, is a third wall whose foundations have not yet been reached, and which probably belongs to the same period as the bath. The two upper walls, for the present, must be placed to the Late Period.

From the chamber (11) situated in the south-eastern corner of this block comes the fragment of a limestone statue (SD 694) illustrated in Pl. C, 8. This was found at a level of 4 feet below the surface of the ground.

Block 2.—The eastern limits of Block 2 are far from definite, and further excavation is required to clear matters up. The south-western corner of this block, however, is well defined, and so is a portion of its western side. A very deep and important wall on its southern limit runs eastwards as far as it has been traced at present. Its foundations have not yet been reached, though excavation has been carried down deep in the street alongside it.[1] This street is bounded on the south by a parallel wall of very inferior masonry. Below are traces of walls of the Early Period.[2]

Well-built bathroom. Block 2 is occupied by buildings and pavements of the Late Period that prevent us, at present, from examining the walls and chambers of Intermediate and Early date, that we know from the street must lie below them. There is among them one chamber (11) of especial interest, which is exceptionally well built and is referable to the Intermediate Period. This is a bathroom (Pl. XXVIII, *b*), 8 ft. 1 in. long N.–S. by 6 ft. wide E.–W. Its floor is made of especially prepared bricks, measuring 9·5 by 5·15 by 2·25 inches. The surfaces of the bricks, which are laid flatwise, are coated with a reddish deposit. The joints of the brickwork are so fine that they will hardly admit the blade of a pocket knife.

Along the S.W. side of the bath there is a small channel, 8·5 inches wide by 6·5 inches below the pavement, which communicates through an aperture in the wall, 9 inches wide by 2 ft. 10 in. high, with a drain in the street to the west. And it is worthy of note that the corners of the channel are carefully rounded to permit of the water flowing away more easily. The bases of the walls of a portion of the room are protected from water by a wainscoting 3 inches high formed by bricks standing on edge. This bath, which is situated a little below the level of the surrounding rooms, was entered from above by a short stairway in its south-eastern corner, measuring 1 ft. 8 in. wide. Two treads still remain, each 8 inches high and 7½ inches wide.[3]

The remainder of the block is in a very dilapidated condition owing to brick robbing—probably in the Kushān period. Fragments of pavements of the Late Period abound, though the walls that once stood upon them have mostly disappeared.

Objects found. In the chamber at the north-western corner of this block (1) the narrow-stemmed jar (SD 590) illustrated in Pl. LXXXI, 19, was found 8 feet below the surface of the ground. In the recess (2) outside the southern end of the western wall of the block, the steatite seal (SD 533, Pl. CXIV, 479) lay 5 feet below the surface. From the chamber (3) immediately east of the recess there was unearthed a broken faience bracelet (SD 427), which is seen in Pl. CLII, 3, and also in Pl. CLVII, 48 ; it was found 4 feet below the surface. Practically nothing was discovered in the centre of this block (4) except the jar-stand (SD 1001, Pl. LXXXIII, 55), which lay 9 feet below the surface of the ground.

The three chambers in the north-western corner of Block 2 contained but little. In the northern one (5) a faience gamesman (SD 892, Pl. CLV, 18) was unearthed from a depth

[1] We have traced this wall down as far as 11½ feet.

[2] The tops of these average 4·30 feet below datum and they project above the débris at the bottom of the street some 5 feet.

[3] The pavement of the bath is 7·7 feet above datum. The water from it descended by a chute placed in the thickness of its western wall. Both bath and chute are of late period. The position of this bath is a little north of the S.W. corner of the block.

of 5 feet. In the adjoining chamber to the south (6) there was a similar plaything (SD 893, Pl. CLIII, 19), made of pottery, lying at the same level. Seal (SD 1850, Pl. CVII, 111) came from 6 feet below the surface in the badly destroyed southern room (7).

The wrecked chamber (8) in the south-eastern corner of the block produced the jar-stand (?) (SD 1185), seen in Pl. LXXXIII, 56, which lay at a depth of 6 feet below the ground.

Block 3.—To the south of Block 1 is Block 3. But little late walling is left here, and that is situated at a high level, on its northern side. Brick robbers have made considerable depredations in the masonry in the interior of the block, leaving only isolated patches here and there of the walling and pavements of the earlier levels. Most of the walls in this block rest on mud filling and the débris found lying in and about the walls of the Intermediate Period consist of rubble and broken brick. In the southern portion of the block there is a narrow lane, 5 ft. 9 in. wide, which though comparatively unimportant yet has its drain.[1]

Antiquities.

In the long chamber (1) at the north of this block a seal (SD 818) was unearthed at a level of 4 feet below the surface of the ground (Pl. CXIII, 414).

From Chamber 2 came the following objects: Jar-stand (SD 835, Pl. LXXXIII, 60) at the level of 7 feet below the surface; pottery heaters (SD 1291 and SD 1217, Pl. LXXXIV, 9 and 11), one from 18 feet and the other from 16 feet below the surface of the ground; and lastly, the white limestone bead (SD 848) seen in Pl. CXLV, 50, from a level of 7 feet.

The painted potsherd (SD 1676) seen in Pl. XC, 18, came from 17 feet below the surface in Chamber 3. From Chamber 4 there came a barrel-shaped agate bead (SD 846) found at the level of 7 feet below the surface.

Block 4.—In Block 4 there is a considerable amount of comparatively thin late walling, and until the pavements of these chambers are removed, it will be impossible to say what lies beneath.

Well.

In the south-western corner of this block (Chamber 13) there is a neatly built well, 5 ft. 8 in. in diameter, whose top is 0·9 feet below datum level. The bricks with which it is lined measure 11¼ by 5⅜ by 2¼ inches. They are of the usual kind instead of being wedge-shaped. This well, which has been excavated down to the present water-level, has doubtless been added to at successive dates, the topmost bricks being of the Late Period. The water-level has, of course, risen considerably since the well was built. In March, 1927, the water-level was 28 ft. 6 in. below the present top of the well.

Objects found.

In Chamber (1) of this block the fine pottery vessel (SD 1049, Pl. LXXX, 28) was unearthed at a level of 5 feet below the surface. In the long indefinite chamber (3) at the north of the block, the painted potsherd (SD 2686, Pl. XCII, 2) was found at a level of 6 feet. Chamber 4 contained quite a number of antiquities: a long barrel-cylinder bead of pottery (SD 1845, Pl. CXLV, 32) at a level of 11 feet below the surface; a glazed steatite bead (SD 1629, Pl. CXLVI, 7), level 8 feet; a painted potsherd (SD 2297, Pl. LXXXVIII, 2), level 9 feet; a copper chisel (SD 1899, Pl. CXLII, 13), level 11 feet; a fragment of a seal (SD 1839, Pl. CIV, 26), level 8 ft. 9 in.; and another seal (SD 1930, Pl. CVI, 84) from a level of 12 feet below the surface.

From Chamber 5, south of the last chamber mentioned, the fine vase (SD 1814, Pl. LXXX, 43) was unearthed, and also a stone ballista ball (?) (SD 2310, Pl. CXXXI, 45). The jar was 8 feet and the ball 7 feet below the surface of the ground. Outside this chamber

[1] The levels above datum of the tops of the corners of this block are: N.E. Corner, 5·8 feet; N.W. Corner, 6·2 feet; S.E. Corner, 1·6 feet; S.W. Corner, 2·3 feet.

on the east (6) and at the level of 5 feet below the surface was found the small paste vase (SD 1823, Pl. CLVII, 11) which was painted to imitate carnelian.

Chamber 7 in the middle of the block contained the fine seal (SD 1553) illustrated in Pl. CVIII, 179; and in the room (9) next to it on the east was found a similar object (SD 1731, Pl. CVIII, 161), but not in such good condition. The former was 6 feet and the latter 10 feet below the surface.

From Chamber 11 in the south-eastern corner of the block came a broken copper lance-head (SD 2007) which lay at a level of 4 feet below the surface; this is described in Chapter XXIV.

Lastly the interesting collection of pottery, illustrated in Pl. LXXXVI, 20–6, Group III, was found in Chambers 14 and 15 at a level of 11 feet below the surface of the ground.

Well-built street drain. On the south of Block 4 there is a street whose southern wall (Block 5) is entirely demolished. But along the street runs a beautifully constructed water channel, which is 9 inches wide by 11 inches deep and covered all the way along with bricks laid flat. The date of this channel is not certain, but it is so carefully built that it suggests Intermediate work.[1] There are several inlets that once communicated with houses in Block 5 on the south, of which, besides a bathroom, only isolated walls and pavements and one small stairway now remains. This street drain falls 2·75 feet in a distance of 60 feet, the eastern end being the lower.[2]

Objects found. From the southern side of this drain were recovered the following objects: Large conical stone (SD 1567, Pl. CXXX, 29) from a depth of 11 feet below the surface; the upper portion of a faience vessel (SD 1705, Pl. CI, 2), 8 feet below the surface; and a piece of shell inlay (SD 1811, Pl. CLV, 60) from a depth of 3 feet.

Bathroom. *Block 5.*—The remains of a well-constructed bathroom (1) in this block deserves mention. Its floor, which is 6·1 feet above datum, is of bricks measuring 9·15 by 4·75 by 2·0 inches and is very solid, being no less than five courses thick, all of the bricks being laid flatwise. As in most of the bathrooms unearthed at Mohenjo-daro, there is an edging of bricks around the walls to protect them. The floor slopes towards the north, where there is a channel 8½ inches wide and 6½ inches deep running E.–W., which at one time was probably connected with the street drain described above.

Objects. On the eastern side of this bathroom at (3), a piece of inlay (SD 847, Pl. CLV, 68) was found at a level of 2 feet below the surface. Further to the east and a little south of the small constructions numbered (4), the jar-cover (SD 1918, Pl. LXXXII, 44) and the narrow-based bowl (SD 1640*a*, Pl. LXXXI, 30) were found. The former was 4 ft. 9 in. and the latter 2 feet below the surface of the ground.

South-west of the bathroom at number 5, a heavy-based vessel (SD 448, Pl. LXXXI, 43) was unearthed from a level of 4 feet below the surface.

Just south of the broken wall at the southern end of this block (6), a piece of shell inlay (SD 2148, Pl. CLV, 56) lay at a depth of 4 feet from the surface of the ground.

House with courtyard. *Block 6.*—On the south side of the street between Blocks 4 and 5 and at its western end, there is a fairly well preserved house (Block 6) of the Late Period, with walls resting on foundations of the Intermediate Period, which is nearly complete. Four rooms with their doorways remain. The southern portion of this house has disappeared or, as seems more

[1] The cover of the channel at its eastern end is 4·7 feet above datum. At its western end it is 7·5 feet above datum, and here there is an inlet from a house in Block 4 to the north.

[2] The levels of this block are: Top of N.E. Corner, 9·3 feet above datum. Top of N.W. Corner, 3·2 feet above datum. Top of S.E. Corner, 3·2 feet above datum. Top of S.W. Corner, 0·6 feet below datum.

likely, there was an open courtyard here. The steps in the south-western corner probably once led to the roof of the house.

Objects recovered. In Chamber No. 1 of this house the large conical stone (SD 207), illustrated in Pl. CXXX, 27, was found at a depth of 3 feet below the surface, and from 2 feet below the surface in Chamber No. 2 came the long barrel-cylinder bead (SD 944, Pl. CXLV, 28).

Covered drain. Between House 6 and the bathroom, already described in Block 5, there is a roughly constructed drain of the Late Period, which runs southwards, at the same time gradually bending towards the east. Its channel, which slopes up considerably from the north, is irregular in size, averaging 7½ inches wide by 8 inches deep.[1] It is covered over with bricks of slightly varying sizes, evidently robbed from various parts of the site.

Block 7.—From this region towards the south, the walls and other structures of the Late Period gradually disappear owing to denudation. Much walling of the Intermediate Period has been laid bare, but is somewhat indefinite owing to this place having been quarried.

Well. A very noticeable feature here is a well of most irregular shape (Pl. XXVIII, *a*). At the bottom it is practically round, but at the top[2] it is elliptical in shape owing to earth pressure.[3] The wedge-shaped bricks of which the upper portion is made measure 13¾ inches long by 2¾ inches thick. One end of the bricks averages 6¾ inches and the other 5 inches wide. The upper portion of the drain has also been roughly repaired in places with ordinary bricks measuring 11 by 5¼ by 2¼ inches. It is very unusual at Mohenjo-daro to find a well so badly built. From its level it should belong to the Intermediate Period, but its upper portion seems to be of Late date. The sizes of the bricks used in its construction help us but little with regard to its date, as in the Late Period the people of Mohenjo-daro were very fond of re-using material taken from the lower levels. The dimensions of the elliptical portion of the well is 5 by 3 feet, and the diameter of the lower portion is 5 ft. 6 in.

Antiquities. The bi-coloured faience spindle-whorl (SD 2040, Pl. CLVII, 36) was found close to the doorway on the outside of the western wall of Block 7, at a level of 4 feet below the surface. A little to the south-west of this object the pottery cone (SD 526, Pl. CXXXIV, 13) was unearthed from a depth of 4 feet below the surface.

From the western side of the curved wall (9) in the south-eastern portion of the block, the interesting stone figure of a ram (SD 1109) seen in Pl. C, 9, was unearthed from a depth of 3 feet.

Remains of important building. *Block* 8.—Immediately to the east and west of this well (Blocks 7 and 8 respectively) there are thick walls of early date which must be part of a building of importance, but without further excavation here, it would be idle to suggest what this might be. From their thickness these walls appear to correspond with the massive walling in the northern slope of Area L; and with a view to tracing a connection between the two sites, it is intended to explore the valley between them later on.

[1] The average height above datum of its middle portion is 8·6 feet.

[2] 1·8 feet above datum level.

[3] Whether its elliptical shape is due to earth-pressure seems doubtful. Another elliptical well has since been found in SD Area, the shape of which appears to have been intentional.—[Ed.]

CHAPTER XI

L AREA

THE area designated by the letter "L" is situated to the south of the large group of buildings on the southern slope of the stūpa mound, from which it is separated by a distance of 92 feet (Pl. XXXII, *a*).

The highest portion of the mound, which is 190 feet above mean sea-level, is at its extreme south. The southern and eastern slopes are very steep. On the west the declivity is slighter and on the north quite gradual. There seems no doubt that the stūpa mound and L mound were at one time linked together and that rains and denudation have now cut a valley between them. **Description of mound.**

To the east of the L Area at its southern end a small but lofty mound, 160 feet above mean sea-level, which has not yet been cleared, appears to cover a thick wall of the Late Indus Period. Some limited digging in the intervening space has, however, failed to reveal any late walling bridging the gap.

To the west a very prominent ridge, which averages 162 feet above sea-level, runs south-westwards for a considerable distance and then turns nearly due westward. What this mound conceals has not yet been disclosed. The northward extension of this ridge ultimately joins the stūpa mound. At about the middle of its length and to the west of it is a prominent mound, 185 feet above sea-level, which undoubtedly contains buildings of the Late Period. This mound is separated from the ridge on its eastern side by a shallow depression. Except where the ridge adjoins this and the main L mound, its slopes on either side are very steep. **Prominent ridge.**

I began the excavation of the L mound at its southern end in January, 1927, and thence worked northwards. The mound has not been entirely cleared, but enough has been done to show its nature. The stone statues found in it imply that this area was an important one. **Excavation commenced.**

As in all the other mounds at Mohenjo-daro, several distinct periods have been traced which belong to the Indus Valley civilization; and there is no doubt that yet other and earlier buildings lie beneath those that have already been wholly or partially cleared. The Late Period is only represented in the highest part of the mound, and the buildings of this date are in a bad state of preservation; in most cases only the foundations of the walls and scattered fragments of pavement remain. As these have not yet been removed to examine what lies beneath, the plan of the mound necessarily appears somewhat complicated. **Various periods.**

In this plan (Pl. XXX), the L mound is divided into sections denoted by large letters. And these sections are divided into blocks which roughly coincide with groups of houses, numbered with large figures. Small Arabic numerals are used for the rooms, etc. Two sections will be found on Pl. XXXI. **Partition of plan.**

Owing partly to the mound having been used as a brick quarry, and partly to the complicated nature of the buildings, the blocks are not so well defined as in other areas of Mohenjo-daro. It is hoped that the resultant confusion of periods will be remedied in the course of further excavations.

Datum level.

Before beginning the detailed description of the buildings, it should be mentioned that the levels throughout are referred to a datum point situated in Section C, Block 5, Room 9, in the extreme north-eastern portion of the plan. This datum, which stands 181 feet above mean sea-level, is one of the points used by Mr. Francis in making his general survey of the whole of the Mohenjo-daro site.

Section A

Beginning at the south of the area (Pl. XXXII, *b*), we start with Section A, which has been divided up into three blocks, Nos. 6, 7, and 8.

Rough constructions.

Block 6 is small. It is bounded on the west by a well-built wall of the Intermediate Period which, it is probable, was added to later, though there is nothing actually left to prove it. Its foundations, which are a considerable depth below the ground, have not yet been cleared. In the Late Period this wall was made use of in the construction of a series of small chambers, Nos. 114, 115, and 116, whose purpose it is impossible to determine (Pl. XXXIII, *a*). These rooms are very roughly built; indeed, so badly that they must be placed near the end of the Late Period. The average thickness of the walls is 2 ft. 3 in. and their mean height is 2 ft. 7 in.[1] For some reason or other, the earlier western wall of these chambers, which is 2 ft. 10 in. broad, was considerably thickened at its northern end by the addition of 1 ft. 4 in. of masonry.

Contents of chambers.

There is no sign of any of these rooms having been paved, and it must be concluded that they had earthen floors, though we found no definite traces of them. The filling inside the chambers contained jars, cones, model animals, and one sling-ball, all of pottery. In Room 116 were found the stone object (L 216) illustrated in Pl. CLV, 15, and the well-made pottery bracelet (L 271) shown in Pl. CXXXIV, 7. From Chamber 114 came the pottery figure of the rhinoceros (L 1108) illustrated in Pl. XCVII, 10, and the decorated carnelian bead shown in Pl. CXLVI, 44.

Block 7 is of large size and quite well defined. It is bounded on the east by a wall of the Intermediate Period and another wall of the Late Period, end to end, in exact alignment. That the southern and late portion is a copy of the earlier section of the wall is shown by the shallow buttress—an unusual feature of the walling of any period at Mohenjo-daro. The foundations of the later masonry are 5 ft. 2 in. above those of the earlier wall and the average height of the two walls is 6 ft. 3 in. above the foundations of the earlier wall.[2]

Complex masonry.

It will be noticed that Block 7 is more or less compact, though a great deal of the Intermediate walling is concealed beneath additions of later date, which make the block very complex. No definite indications have yet been found of its original entrance, though the probability is that it was at the south through 117. The sections marked 112 and 117 (Pl. XXXIV, *b*), in reality form one continuous space, which is separated from the remainder of the block by a long wall of the Late Period running N.–S. This space must have been empty ground, for there is a great difference between the levels of its eastern and

[1] The foundations are 6·9 feet below datum.

[2] The base of this wall is 6.5 feet below datum.

western walls.[1] In fact, the base of the latter is very little below the present top of the former wall. The block of masonry of the Intermediate Period, a little to the north of 117, seems to have carried a flight of steps leading up from the lower level on the east. The top of this block has been much denuded, and there are now no traces of anything except a rough incline. In region 112 were found two vessels (L. 85 and L 86) illustrated in Pl. LXXXVI, Group I. These were lying, the smaller inside the other, immediately south of the steps.

Finds. In 117, which can hardly be described as a room, a ball of limestone (L 139) was found; it is 2½ inches in diameter and roughly chipped into shape, and resembles the ballista balls of baked pottery and stone that are so common in all periods in early Mesopotamia. Two small pottery balls resembling sling-balls were also found here, as well as a small amount of pottery and a large number of pottery cones of all types. All these objects lay below the base of the late wall on the west.

Enclosure wall. The western portion of Block 7 is on fairly flat ground. Chamber 118 is bounded on the south by the exceptionally thick Intermediate wall, 6 feet broad, that also bounds the adjoining Block 8. This wall is remarkably well built ; its size suggests that it was once an enclosure wall. The eastern end is well preserved, but the middle portion is very dilapidated and overlaid by later constructions. The remains of paving of the Late Period[2] show that Room 118 was at one time used as an ablution chamber. Beneath this pavement there is an elaborate system of water-channels of the same period. The waste water was allowed to run through an aperture in the western wall, measuring 5 inches high by 6 inches broad, which communicated with a drain outside (Pl. XXXVIII, *c*). The bricks forming the pavement of the bath in Chamber 118 are well made and measure 8 by 5 by 2½ inches. **Pottery and other objects.** Two large, rather badly preserved pottery jars, with parts of their upper portions missing, were found in this chamber, one close to the northern wall, the other lying against the southern wall. A portion of the pavement had been removed to accommodate each of these jars. Both were coated with a thick red slip and decorated with broad black lines, and it seems probable that they were water-jars for use in connection with the bath. One of these jars (L 240) is illustrated in Pl. LXXXIV, 25. Other articles found here comprised pottery cones (L 95 and L 212) of similar types to Nos. 11 and 13 in Pl. CXXXIV, a pottery model of a dog (?) (L 64), and a number of clay balls rather roughly baked (L 179). All these objects undoubtedly belong to the Late Period.

Ablution place. The three adjoining rooms to the north, numbered 119, 120, and 122, are quite small compartments. No. 122 has a well-built ablution place at its northern end, the floor of which is built of bricks measuring 10 by 4 by 2½ inches. The northern, eastern, and western sides of the bath were edged with bricks projecting from 3 to 5 inches from the floor (Pl. XXXIV, *b*). The southern side of the room has been badly destroyed, but there are traces near the western wall of either a second ablution place or a continuation of the first.[3] There is an aperture, 11 inches high by 7½ inches wide, at the southern end of the western wall to carry off the water from the bath (Pl. XXXVIII, *c*). The drains from both this chamber and No. 118 communicated with a well-built street drain outside, in which the flow was to the north. The walls of Chamber 122, which measures 15 ft. 9 in. long by 7 ft. 4 in. wide, are of the Intermediate Period, with indications here and there that they had been added to in the Late Period. A jar-cover (L 30) and a bracelet (L 42) made of pottery were found in this

[1] The base of the Late wall to the west is 0·4 feet below datum, whereas the base of the Intermediate wall to the east is 6·6 feet below datum.

[2] 3·7 feet above datum.

[3] The pavements of both are 3·8 feet above datum.

chamber, and also a small door-socket (L 29) of hard black stone which was found in the N.W. corner.

Pavements.

Chamber 120 is bounded by a wall of Intermediate date on the north and west, whose foundations go down to a considerable depth. On the east and south, however, the walls belong to the Late Period.[1] The southern wall of this chamber is only 1 ft. 4 in. thick, and is merely a partition wall dividing it from No. 119. A fragment of Intermediate wall at the western end of Chamber 120 is covered over with paving at about the same level as that of Chamber 122. The average dimensions of Chamber 120 are 7 ft. 9 in. N.-S. by 7 ft. 6 in. E.-W. Nothing of importance was found here.

Chamber 119 is of little interest. The remains of a pavement of the Intermediate Period on its southern side are a little below the level of the pavement in Chamber 122.

The large court, No. 121, which can be seen partially cleared in Pl. XXXIV, *b*, measures 23 ft. 9 in. E.-W. by 25 ft. 10 in. N.-S. Owing to its considerable size, it is unlikely that it was ever roofed over. The greater part of its earlier pavement has been removed by brick-robbers, but small portions appear here and there.[2] Alongside the western end of the southern wall, which belongs to the Intermediate Period, the remains of a later pavement, 4 inches thick, stand 1½ ft. above the earlier pavement. To the east of this there is a solid mass of brickwork of indefinite shape.

Subsidence of court wall.

The northern wall of this court has sunk badly in places. It now stands 6 inches high at the eastern end and 1 ft. 6 in. high at the western.[3] It is uncertain whether or not a doorway in this Late wall once led into Chamber 111; there are slight indications of what might have been its eastern jamb. If this was so, the sill of the doorway would have been 2·2 feet above datum. Against the western wall (Intermediate Period) of this court a fragment of pavement, some 3 to 4 inches thick, is laid at the same level as the pavement to the south of it.

Objects.

But few objects of interest were found in this court; pottery cones and sherds were common and there were a few flint flakes. The most unusual object was a cone made of shell (L 76), of which only one example was found in the whole of this area (Pl. CXXXIV, 9). Model animals made in pottery were fairly numerous, but they were invariably broken. The curious pottery figurine (L 78) seen in Pl. XCV, 14, also came from here. All the objects found were above the level of the earlier pavement and belong to the Late Period.

Footing marking level of pavement.

Chamber 111 measures 14 feet E.-W. by 9 ft. 10 in. N.-S., and its walls, which average 1 ft. 3 in. high, are all of the Late Period. Moreover, they all have a footing on the inside, which roughly marks the level of the original brick paving.[4] As mentioned above, the entrance to this chamber was possibly from the south. A pottery ball, a jar, and a pottery ring were the only objects found in this room.

Chamber 100 is very large, measuring 42 ft. 10 in. E.-W. by 14 ft. 9 in. N.-S. It is entered in its south-western corner by a doorway 4 ft. 8 in. wide, which was possibly not quite so wide originally as represented on the plan, since its southern jamb is by no means well defined.

At the western end of this apartment is a long wall, 3 feet wide, of the Intermediate Period, running E.-W. Its average height is 2 feet, and it was formerly concealed and incorporated in a 9½ inches thick pavement of the Intermediate Period, which is now destroyed.[5] This stretch of early walling is linked to the southern wall of the chamber by a fragment of paving of the Late Period, which is 6 inches thick and 4 ft. 3 in. above the level of the

[1] Their bases are 1·4 feet above datum and they average 2·5 feet in height.

[2] These portions average 1·6 feet above datum.

[3] Its base at the eastern end is 1·4 feet above datum.

[4] This footing is 2·4 feet above datum.

[5] The surface of this pavement was 3 feet below datum level.

destroyed Intermediate Period pavement, showing clearly that the chamber was occupied at two distinct periods.

Intermediate walling. The walls of this chamber stand a considerable height, and it seems that the northern and eastern sides and part of the wall on the west were added to in the Late Period. Additions such as these, however, are usually very difficult to detect, and in the absence of absolute evidence we must regard these walls as belonging to the earlier period from the fact that their foundations go considerably below the foundations of the wall of the Late Period on the south of the chamber.

Important find. A few small objects were found in this room including some beads, shells, pottery balls, two clay jar covers, and the pottery figure (L 4) seen in Pl. XCV, 4. There was, however, one important find, the limestone head (L 127) shown in Pl. XCIX, 1–3, which lay near the middle of the chamber at a level of 1·1 ft. below datum. The position of the head was, therefore, between the two pavements found in this room ; but as the upper pavement like the one below it had been almost entirely removed, it is possible that the head may once have lain on the upper pavement and that it was thrown aside when the pavement was removed for its brick.

Block 8.—Block 8 is separated from Block 7 by a wall of the Intermediate Period, averaging 2 ft. 6 in. thick, a portion of which is overlaid at its northern end by later walling. Its foundations have not yet been cleared, and their exact level is in consequence unknown. Through denudation and the later additions this wall varies considerably in height.[1] The extra height of the southern portion of this wall suggests that it was added to in the Late Period. There is, however, no evidence of this, but it is quite possible that the work was so carefully done as to leave no trace.[2]

Lane. It seems that there was once a narrow lane on the west of this wall, of which but little now remains. The principal feature here is a drain of the Intermediate Period, running N.–S., and measuring 5½ inches wide with an average of 5 inches deep. It slopes towards the north, the decline being 1 ft. 2½ in. in about 48 feet.[3] It is constructed of bricks usually laid as headers and is covered in places by bricks laid flatwise across it (Pl. XXXVIII, *c*).

Doorway. Immediately south of the portion of the street marked 123, there is an old doorway, 4 ft. 6 in. wide, set in the Intermediate wall to the east. This was subsequently blocked up very roughly, especially on the western side of the wall ; on the eastern side it is partly hidden by the constructions in Chamber 118. The southern jamb of this doorway is part of the very thick Intermediate wall to the south of it.

The buildings to the west of the drain already described are of a very complex nature, owing to the presence of badly weathered walls and pavements of the Late Period which we have not thought it desirable to remove as yet. At the south there appears to have been another small lane running E.–W. immediately alongside the great southern wall. The remains of the drain in this street slope to the west. Its eastern end doubtless once communicated with the long N.–S. drain in the lane first mentioned.

Bathrooms. Chamber 129 is of the Late Period, and its well-paved floor suggests that it was once a bathroom. The pavement is of bricks measuring 11 by 5 by 2½ inches, and slopes slightly towards its north-eastern corner.[4] There are the remains of an edging of brick around the bath, standing 3 inches above the level of the pavement. This bath overlies earlier

[1] At the south its summit is 7·1 feet and at the north 3·1 feet above datum.

[2] The sizes of the bricks do not help us, as they were probably taken from lower levels.

[3] At its southern end the base of this drain is 2·3 feet above datum.

[4] This corner is 3 feet above datum.

constructions which, owing to its presence we have not been able to examine properly, but enough has been cleared to show a wall beneath the bath running N.–S., parallel with the wall which bounds Block 7 on the west.[1] Its foundations have not yet been reached, but its western face shows a distinct batter and there are also traces of a footing on this side. In its vicinity the very fine steatite model of a mastiff (L. 590) seen in Pl. XCVI, 17, was found a little below the level of the top of this western wall in the region marked 128, at 3 ft. below the surface of the ground.[2]

Partially overlying the northern end of this same wall is another bath in Chamber 126. The floor is of bricks measuring 10 by 4½ by 2 inches, and, as these are of unusually small size, it is probable that they were especially made for paving purposes. The two sides of the bath, which alone are preserved, have an edging of brick projecting 3 inches above the pavement, each brick being laid as a stretcher. The floor slopes towards the south-eastern corner.[3] To the south of this bath, which belongs to the Late Period, there are the remains of a drain, two bricks deep, and with sides the width of a brick in thickness. To the north, the remains of walling of the Late Period overlie a cross-wall of an earlier period that bounds Chamber 126 on the north. A fragment of pavement on the eastern side of this chamber belongs, like the bath to the west of it, to the Late Period, and is a foot in thickness.[4] A faience bead (L 53) similar to No. 36 in Pl. CXLV and a small pottery jar (L 68) were the only things of interest found in this chamber.

The northern portion of the block is, like the southern part, complicated by later walls and pavements which we have not yet removed. There is little of interest here save yet another bath in Chamber 110 and the structures around it. This bath is paved with bricks 11 by 5¾ by 2¼ inches in size, and on its eastern and southern sides an edging of brick stands 2½ inches above the level of its floor, which slopes towards the S.W. corner.[5]

Chamber 109, to the west of the bath, is also of the Late Period, and has a few scanty remains of paving. Chamber 108 to the north of this room also shows evidence of having once been paved. The walls of these three rooms are very thin ; they average 2 feet high,[6] and as their bases are at a level considerably above the level of the bath, they must, in consequence, be later additions.

Chambers 102 and 103 are enclosed by walls that all belong to the Late Period. No doorways are now visible, and only the foundations of the chambers remain. There is a small patch of pavement in the north-eastern corner of Chamber 103, which is some 4 inches thick,[7] and down the centre of the room from N.–S. are the remains of a wall of the Intermediate Period, whose present top is practically at the same level as the pavement.

Objects found.

In Chamber 104 there were found three seals (Nos. 304, 341, and 382 of the seals illustrated), the fine copper axe (L 383) illustrated in Pl. CXXXIX, 5, and a razor (L 238), also of copper, which is shown in Pl. CXXXVII, 5. Of especial interest is an ivory plaque (L 375), which is shown in Pl. CXXXII, 10, and which is carved on one side, in relief, with the figure of a man holding a bow.[8] Lastly a lead cone (L 418), thought to be a weight, was recovered from this chamber. From their levels all these articles can be dated to the Late Period.

In Chamber 103 was found the little polychrome jar-stand (L 245) seen in Pl. CLVII, 6. Close to this was an interesting clay model of a pig (L 600), which is illustrated in Pl. XCVI, 22.

[1] The top of this wall averages in height 2·1 feet above datum.
[2] About 2·1 feet above datum.
[3] This corner is 3·1 feet above datum.
[4] Its top lies 8·3 feet above datum.
[5] Here it is 3·2 feet above datum.
[6] Their bases are at a mean level of 1·3 feet above datum.
[7] The surface of this is 1·6 feet above datum.
[8] Described in Chapter XXVIII.

Section B

Owing to denudation this section now lies at a considerably lower level than Section A, with the result that little walling of the Late Period now remains, except on the south and west, where the unusual heaviness of the masonry has prevented much erosion. The very thick wall to the south-west of the section is especially noticeable. It is very badly built, despite its thickness of 7 feet. At its western end it stands 2 feet high, and at the eastern end it is a foot higher.[1] This wall appears to belong to the Intermediate Period, but, on the other hand, the roughness of the masonry suggests that it is of later date. It is possible that when it was constructed there was a considerable dip in the ground here, which would have become accentuated as time went on. **Thick wall.**

Block 9.—The most interesting part of this section is its eastern side. Here the space between two well-preserved walls of the Intermediate Period is converted by partition walls of the Late Period into a series of small chambers, Nos. 93, 94, 95, 96, and 97, which were entered from the open space (91) to the west of them. In this space was found the pottery bull (L 350) seen in Pl. XCVII, 17. A number of beads were also found here, some of which are worthy of notice: as, for instance, Nos. 43, 45, and 49 in Pl. CXLV. The jar-stand pictured in Pl. LXXXIII, 58, was also recovered from here, but no other pottery. **Partition walls.**

The top of the western wall of Rooms 94–7 has been badly robbed of bricks; it is uniform in height throughout its length. Its foundations have not yet been reached. The lowering of this wall must have taken place before the additions were made to the east of it; these chambers could not have been entered from any other direction, for the wall of similar date on the east is considerably higher and is, moreover, overlaid with later walling. Some idea of the original height of the western wall is afforded by a block of masonry that was left standing at its southern end.[2] **Brick robbing.**

In Room 97 were two very badly broken storage jars, which it was impossible to reconstruct, while a quantity of charcoal mixed with broken brick and other rubbish was found in the filling of the room—a very unusual feature. On the southern side of this room there is some rather indefinite masonry of the Late Period, a portion of which rests on Intermediate walling. **Storage jars.**

The partition wall on the northern side of this chamber is unusually thick (3 ft. 3 in.) for a wall of this description. It stands 2 ft. 6 in. high. The few articles found in this room include pottery cones and broken animals of baked clay, but nothing of importance.

Room 96, which is not entirely regular and measures 10 ft. 6 in. by a little over 5 feet wide, is bounded on the north by a thin wall. Fragments of the original brick flooring still remain,[3] and there is a well-cut niche, measuring 2 ft. 9 in. wide by 18 inches deep, in its western wall. A pottery cone (L 332) and two model animals in baked clay (L 327 and 328) were found near the pavement level of this room. The first animal is illustrated in Pl. XCVII, 20. **Niche.**

The dimensions of Room 95 are 8 feet N.–S. by 10 ft. 6 in. E.–W. In its thin northern wall there was once a doorway, 3 feet wide, which was subsequently closed and still remains blocked up. No objects whatever were found in this room.

Room 94, which measures 10 ft. 9 in. by 8 feet, is bounded on the north by a cross-wall

[1] Its base is 0·1 feet below datum.

[2] The top of this is 0·2 feet below datum.

[3] This floor level is 6 feet below datum.

Paving.

dating from the Intermediate Period, which joins and is part of the walls on the north and south of the chamber. Along part of the eastern wall there is a ledge at the level of 6·2 feet below datum. This ledge is continued along the eastern side of Room 93, and one suspects that it is the result of building a later wall upon an earlier one ; but there is no direct evidence, though every probability, of this having been done. Room 94 was formerly paved with burnt brick in one layer 2½ inches thick.[1] A fine seal (L 323), pictured in Nos. 227, 230, and 356 in Pls. CIX and CXI, was found at pavement level in this chamber and definitely belongs to the Late Period. At the same level as this seal a jar-cover (L 330) was found, and a shell bead (L 348).

Entrances.

The entrances to all these chambers, with the possible exception of No. 97, could, as explained before, only have been on the west and over the Intermediate wall (Pl. XXXVII, *a*). As the top of this wall is 1 ft. 6 in. higher than the level of the pavement in Chamber 94 and presumably in the other chambers, there was a considerable drop into all of them. This, however, is quite a common feature in the poorer houses of the East at the present day. On the other hand, it is possible that these rooms were used as cells to form the foundations of an artificial platform ; but, if this were so, it is difficult to account for the paving and the blocked-up doorway on the southern side of Chamber 94.

Stairway.

Chamber 93 was apparently subdivided in the Late Period by a wall of seemingly most unnecessary thickness. There are indications, however, that the northern part of this wall and the adjacent mass of masonry were once a stairway. The arrangement of the lower courses of bricks strongly suggests a stairway, though no definite treads remain. These later constructions are weathered down to the same level as the wall against which they lie.

Room 93 appears originally to have been entered from the south, where there is still a door-sill, 3 feet wide.[2] This doorway was afterwards blocked up. There was possibly another entrance in the western wall[3] ; but it seems to have been blocked up soon after, or at the time of building. Moreover, it was extremely narrow, being only 2 feet wide. A jar-lid (L 400), a toy bull of pottery (L 371), and a shell cone (L 395) were found in this room with other odds and ends.

Objects.

It appears unlikely that 92 was a chamber ; more probably it was a large recess on the northern side of a big courtyard, whose walls, like those of Chamber 93, are of the Intermediate Period.[4] A considerable number of objects were found in the débris overlying this recess, including a seal (L 316) illustrated in Pl. CX, 272, pottery cones (L 311 and L 310), a clay pellet (L 309), two broken clay models of bulls (L 306 and L 307), jar-cover (L 312), several pottery jars (L 366) of the type illustrated in Pl. LXXX, 47, and a plain pottery saucer (L 320).

West of 92, in the little cell 88, a lead net-sinker (?) (L 394) was found lying on the top of a wall of the Intermediate Period. This is pictured in Pl. CXXXIII, 21, and is described in Chapter XXIV. The walls around this cell belong mainly to the Intermediate Period, but are topped in places with remains of the Late Period.

Intermediate walling.

Block 10.—Near the centre of Section B (89) there is a large mass of Intermediate walling, which was probably once connected with the walls around Chambers 92–7. The southern face of this walling is in a very bad condition, so that it is impossible to ascertain its original thickness, which must have been considerable ; it now averages 6 feet in width. Its

[1] The surface of this pavement is 6·9 feet below datum, i.e. about the same level as the base of the thin southern wall.

[2] At a level of 4·2 feet below datum.

[3] Its sill is 3·9 feet below datum.

[4] They reach to an average level of 3·2 feet below datum.

foundations have not yet been cleared. Two thin walls averaging 2 ft. 6 in. high, which appear to have been built in the Late Period, project from its northern side.[1]

To the north of this mass of masonry there are three solid blocks of brickwork, of which the middle and largest is built in two sections. Of these also the foundations have yet to be cleared.

Finds. Very little of value was found in the ground around and in the vicinity of 89. Children seem to have played there, for no less than three pottery balls were unearthed (L 464, L 541, and L 512), and also a pottery animal (L 490). Four *sank* shells (L 393 and L 410) were probably throw-outs from a shell-worker's shop. Four jars (L 443, L 475, L 511, and L 540) were all the same shape as No. 46 in Pl. LXXX, a type which was exceptionally common in the Late Period. One of the curious cover-like objects (L 493), of which we do not as yet know the use, and of which some are illustrated in Pl. CXLVII, Nos. 30–6, was found in the enclosure 89. This was made of a hard black stone, and most closely resembles No. 35 in the plate.

Block 11.—On the west of the open space (90) is a block of masonry of the Late Period, on which is a stretch of pavement that averages 15 inches in thickness.[2] A wall, 4 feet high, lies across this pavement at the east with its base resting on the pavement. Some distance to the east, again, there is yet another considerable stretch of pavement, 14 inches thick,[3] which also belongs to the Late Period.

Mud-filling. The presence of these walls and pavements, all in a sadly mutilated state, suggests that this portion of Block B was at one time covered with buildings, and it is probable that in ancient times, as well as in the Kushān period, this portion of L Area served as a quarry for bricks. A great deal of mud-filling was found in the vicinity, and upon it some of the later pavements rest. A broken seal (L 351), pictured in Pl. CX, 307, might have been dropped by one of the brick-robbers. It was found close to Block 9, and lay just beneath the surface of the ground. Other objects found in the vicinity of 90 are: pottery balls (L 318, L 324, and L 357), two model pottery figures of cattle, very much mutilated (L 342 and L 362), and a pottery cone of the type illustrated in Pl. CXXXIV, 11 and 12.

Section C

Section C, which is separated from Section B by a street running E.–W., is divided into two blocks (Nos. 4 and 5), and is the most interesting part of L Area. This portion of the mound is fairly level with the result that comparatively little denudation has taken place and the doorways of the various chambers are more or less intact. Fortunately, but little remains of the buildings of the latter end of the Late Period, if, indeed, any covered this section. We have, therefore, been able to examine the structures of the Intermediate Period and the earlier part of the Late Period more fully than would have been possible if they had been cumbered with later material.

Block 4.—Block 4, as may be seen in the plan, presents very unusual features. For convenience sake its southern portion will be described first (Pl. XXXIII, *b*).

Court. Court 82 is bounded on three sides by a wall of the Intermediate Period. There was probably once a wall to the east also, but no trace of it remains and one can only conclude that it has been washed down the side of the mound, which is fairly steep at this point.

[1] Their bases lie 6·0 feet below datum.

[2] It lies at the high level of 1 foot above datum.

[3] 0·8 feet below datum.

The slope of the mound is now close to the eastern side of the large well in the space marked 85. This court averages 58 feet wide N.–S., and its southern wall, which is fairly well preserved, now stands at an average height of 4 ft. 6 in. above the level to which we have cleared. Its foundations have not yet been reached. In the northern part of this court a seal (L 742) was found, which is illustrated in Pl. CIX, 234. This probably belongs to the Late Period; it lay beneath a massive burnt brick-filling that nearly filled up this court.

Well.

In the remains of a chamber (85) there is a well, 7 ft. 5 in. in diameter, lined with a single thickness of wedge-shaped bricks, measuring 11½ by 5½ by 3¼ to 4¾ inches. This has not yet been cleared out. It is seen in Pl. XXXII, *c*.[1]

To the east of this structure are the remains of indefinite walling, which may belong to the Intermediate Period. These average 17 inches high and their bases 8·8 feet below datum. To the west of the well is a cross-wall of Intermediate date, 2 feet thick and 2 ft. 3 in. high. Farther to the west, again, there is a mass of masonry (84) of the Late Period, some 3 ft. 4 in. high (Pl. XXXVIII, *e*). This is part of a massive brick-filling that was found to extend throughout the court and which we had partially to remove in order to examine the walls. The exact object of this brick-filling is difficult to determine unless it was provided to form an exceptionally firm foundation for a building above it that has quite disappeared. The bricks of this filling were well laid with mud-mortar, their axes running E.–W., and the highest part reached the top of the Intermediate Period wall to the west, whereas it gradually petered out to the east, together with the walls that enclosed it on either side.

Burnt brick-filling.

Late Period paving.

In Chamber 83 there are remains of paving of the Late Period,[2] with a thin wall 19 inches high resting on it to the east. Before being cleared, these structures were entirely covered by the filling described above. In the Court 82 were found a piece of crystal (L 441) and a bead (L 453). Chamber 84 yielded two beads (L 662 and L 663), the first of which is illustrated in Pl. CXLVI, 2, and a fragment of a steatite seal (L 661) pictured in Pl. CX, 264. The paucity of objects in this courtyard was remarkable; those that were found probably belong to the Late Period, as much débris still remains concealing the Intermediate structures beneath.

Large pillared hall.

The northern portion of Block 4 (Pl. XXXVI, *a*) was originally a large hall of the Intermediate Period which appears to have beer entirely covered in, the roof being supported by twenty rectangular piers averaging 5 feet by 3 ft. 4 in. in thickness. Owing to alterations which were made later, not all these piers can now be traced, but we have undoubted evidence that originally there were five piers in each row; two rows on the western side of the hall are intact. The two eastern rows are not so well preserved, but traces of two piers still remain in the row on the extreme east, which are slightly thinner in the E.–W. direction; i.e. 3 feet thick instead of 3 ft. 6 in. The distances between the piers in the same row average 9 ft. 7 in., the variation never exceeding 3 inches. This remarkable accuracy was not observed in the spacing of the rows; for the three western aisles vary in width from 14 ft. 2 in. to 15 feet, whereas the two easternmost rows are 13 ft. 6 in. apart. This lay-out is, on the whole, very satisfactory, and argues great proficiency on the part of the masons. Gypsum as well as mud-mortar was used in erecting these columns, as elsewhere in the building. The bricks were laid in alternate headers and stretchers, closers being used to break the perpends where required. The masonry, however, does not show the same skill as the lay-out, the joints between the bricks varying considerably (Pl. XXXVIII, *d*). The sizes of the bricks used were :—11 by 2·25 by 5·5 inches; 11·25 by 2·25 by 5·5 inches; 10·75 by

[1] This well is of unusual size and somewhat roughly built; indeed, it may possibly be unsafe to call it a well before further clearance. Its present top is 6·6 feet below datum.

[2] 8·9 feet below datum.

2·5 by 5·4 inches. The bricks used in the later partitions measure 10 by 2·75 by 5 inches and 11 by 2·5 by 5·5 inches.

Piers. Each row of piers rests on a footing, or continuous foundation wall, running N.–S., which averages 1 ft. 2 in. high and projects 6 inches beyond the eastern and western faces of the piers (Pl. XXXVI, *c*).[1] The footing has only been examined beneath the northernmost piers, for to lay the foundations bare as far as the southern end of the hall would necessitate destroying the pavements between the piers, to be described later.

Foundations. These foundation walls are very roughly built, each course projecting slightly beyond the course below ; and the courses themselves are irregular and undulate considerably, owing to the fact that the ground was not properly levelled before they were laid. Their number also varies with the inequalities of the ground.

The best preserved piers are those on the western side of the hall. Owing to weathering, the remains of the piers become shorter and shorter, the farther they are to the east, until the tops of the two surviving columns in the easternmost row have almost disappeared.

Later partitions. During the Late Period this pillared hall was partitioned off in places by building walls between the piers (Pl. XXXVIII, *d*). The columns to the east of the aisle marked 24 were linked together by two facing walls, each one brick (i.e. 11 inches) thick, the space between which was filled up with broken brick and general débris ; and the eastern of these two wall-faces was buttressed to strengthen it. Though the outer surfaces are good, the inner surface of each wall-face is very rough. No mortar was used to bind the filling. The hall was also partitioned at the south by a wall of the Late Period, 2 feet wide, with a doorway 3 ft. 2 in. wide at the eastern end. The eastern jamb of this doorway was rebated, presumably to take a wooden door. The sill is well preserved and the western jamb is 13 inches high.[2]

At the same time strips of pavement, arranged in a peculiar way not found elsewhere at Mohenjo-daro, were laid down between the columns.

Paved walks. In the northern portion of the western side of the hall (25), there are two strips between the wall and the first row of piers. The strip against the wall is only 1 ft. 11½ in. wide, and the parallel strip is 2 ft. 10½ in. wide. In both, the paving is especially well preserved at the southern end, where there is a cross pavement on which is the wall that here partitions the original hall. Each strip of pavement is neatly bordered with bricks set on edge, as in the ablution places of this and other parts of Mohenjo-daro. These bricks stand 5½ inches above the pavement.

There are similar strips of pavement in the next two aisles (24 and 23) (Pl. XXXV, *c*), and the easternmost pavement of all is 3 ft. 5¼ in. wide. These strips are also carefully bordered with bricks set on edge (Pl. XXXIV, *a*).

Aisles. In each aisle there is a strip of unpaved ground made of loose débris between the pavements, the meaning of which it is difficult to fathom (Pl. XXXV, *c*). These unpaved strips average 3 ft. 6 in. in width, and have a roughly built edging of bricks placed as headers, which may have been provided to prevent the bricks at the edges of the pavements from collapsing into the unpaved portions. It has been suggested that these spaces between the pavements were at one time raised and used as benches of some sort. If this was so, it is surprising that some trace of them has not been left, for though a great deal of destruction has taken place in this hall, but little attempt has been made to remove the paved walks, which would surely have suffered also with the removal of the supposed benches.[3] Moreover, the edges of the pavements are more or less intact.

[1] The top of the footing averages 14·1 feet below datum.   [2] The level of this sill is 8·1 feet below datum.

[3] See *supra*, pp. 23-4, where a different view is taken.—[ED.]

Cut bricks. The bricks used for these strips of pavement measure 10 by 5 by 2½ inches. They are exceedingly well made, and appear to have been cut down from a larger size of brick, judging from the saw-like marks that are still visible. In some cases bricks even of this size were too large to fill up various interstices and were cut down to make them fit; for instance, bricks measuring 10 by 2½ by 2½ inches and 10 by 3½ by 3½ inches were found.

The bricks were all laid with their axes running with the axes of the pavements. None shows evidence of the wear that would be caused by the constant passage of feet, though at the southern end of the eastern pavement of aisle 23 there is a shallow circular depression which looks as though it had been hollowed out to hold a medium-sized jar. There is a similar, but more irregularly shaped depression at the northern end of the same walk, and both hollows are in the middle of the walk.

Despite the care expended in laying these paved walks, which are over a foot, i.e., five courses, thick, a certain amount of subsidence has taken place, especially in the middle axis. The average level of the pathways—and they all agree with one another very closely—is 8·5 feet below datum. In two of the longer paths there seems to be a definite slope of 2 inches in 15 feet towards the north. This slope might, of course, be due either to subsidence or to errors in laying, but more probably it was expressly arranged for drainage. That these paths were constantly washed down is strongly suggested by the edging on each side, which is exactly like the edging round every ablution place at Mohenjo-daro. The mortar used in laying these pavements was mud, but very little was required owing to the fineness of the joints between the bricks.[1] On this account, it was difficult to remove the bricks for examination.

The pavements in Rooms 26, 27, and 28, on the southern side of the partition wall of the Late Period mentioned above, were laid down at the same time, and are continuous with the strips just described. But, later again, this section of the original hall was further subdivided into separate rooms.

The pavement of Room 28, which measures 22 feet N.–S. and 7 ft. 3 in. E.–W., has been badly damaged, but enough remains to show that it was of exactly the same nature as that in the hall to the north of it, and there is only a difference of an inch between the levels. Another entrance into this room, at the southern end of the western wall of the original hall, was so carefully blocked up that it is impossible to determine the level of the original sill. This door was filled in early in the Late Period. The top of the wall here is 2 ft. 2 in. high above the paving; its base has not yet been cleared.

Śank shells. Room 27 is partially partitioned off on the east by a wall that was constructed early in the Late Period, which connects the Intermediate pier with the wall of the same date to the south. The tops of the pier and of the wall contiguous to it are 5·9 feet below datum; the base of this wall rests on the pavement of this part of the great hall. The pavement of this room is better preserved than that of the adjoining room (26) on the east. A quantity of *śank* shells—sixteen of them in perfect condition (L 440)—were found mixed with pottery at a level of 2½ to 3 feet above the pavement; they must clearly be of the same date as the very late partition wall between this room and 28.[2] In Chamber 27 were also found the following objects, all of which belong to the latter end of the Late Period: two round pieces of shell inlay (L 451); a barrel-shaped bead of steatite carved with a trefoil pattern (L 445), illustrated in Pl. CXLVI, 53, and Pl. CLII, 17; and a copper tablet (L 461), pictured in Pl. CXVII, 4.

[1] In contradistinction to the walls, the pavements are usually, if not always, laid in mud.—[Ed.]

[2] This partition wall stands 2 ft 5 in. high Its base is 7·9 feet below datum, and its sill 5·9 feet below datum.

Pottery. The eastern portion of Room 26 has been so badly damaged that its exact dimensions cannot be determined. Its length from north to south is 22 feet. In the S.E. corner there is a mass of masonry consisting of walls of the Late Period, which were presumably built some time after the laying of the pavement. The average level of the tops of this complex of walls is 8 feet below datum, and the top of the earlier wall that they lie against is but a few inches lower. The western portion of the chamber is intact and Pl. XXXIV, *c* and *d*, show the well-preserved paving here. Lying on this pavement were nine pottery beakers, one of which is illustrated in Pl. LXXX, 21 (L 487, L 488, and L 489). With these were a fragment of steatite inlay (L 460) and a piece of crystal of irregular shape (L 465).

The very long chamber (20 and 21) was sadly mishandled and altered in the Late Period. That this also was a part of the large pillared hall is proved by the two piers incorporated in its eastern wall. It is possible that another column of the row is incorporated in the piece of late walling at the northern end of the eastern side of the chamber, but to test this point the wall would have to be removed.

Brick bench. At the southern end of the chamber are the remains of an Intermediate Period wall, only 7 inches or so high.[1] On the western side of the chamber a long brick bench, built in the Late Period and averaging 18 inches in height,[2] is built against the foundations of the earlier piers (Pl. XXXII, *c*, and Pl. XXXV, *d*).

At the southern end of this bench, which is uniform in level along its entire length, there is a square pier-like mass of masonry, 2 ft. 8 in. high, whose base rests on the bench. Beyond the ends of the bench the bases of the later walling that connect the Intermediate Period piers can be seen. This chamber (20 and 21) seems to have been entirely paved in the Late Period, for fragments of paving, one brick thick, were found here and there.[3]

Drain. The remains of an early drain lie beneath the northern end of the eastern wall. The sides of this drain are one brick, i.e., 11 inches, thick, the bricks being arranged as stretchers, and the channel of the drain is 5 inches wide and deep, and slopes towards the south.[4] The two piers which rest on this drain are very badly damaged owing to their being very close to the edge of the mound (Pl. XXXII, *c*).

In the region marked 19 there is a patch of Late Period walling, a little over 1 foot high, resting upon masonry of the Intermediate Period.[5] A patch of pavement (?) immediately to the east is 18 inches thick and from its level appears to belong to the Intermediate Period. Two model pottery bulls (L 796 and L 797) and a pottery jar (L 813) of a type similar to No. 56 in Pl. LXXX, were found at a level a little above this pavement.

Recess. In the N.E. corner of 21 were found the remains of a doorway of the Late Period, 3 ft. 4 in. wide. The sill had been entirely removed, but the two jambs are well preserved and stand 5 ft. 9 in. high (Pl. XXXV, *c*). In the northern wall of this chamber, which is of Intermediate date, there is a long narrow recess, 7 ft. 6 in. in length by 10 inches wide. This was at first thought to be the result of building a thin wall upon a thicker one, but the style of masonry is the same throughout, and, moreover, the recess is not continued for the whole length of the wall.[6]

Objects found. In the northern part of Chambers 20 and 21 were found a pottery jar (L 710), illustrated in Pl. LXXX, 49, a shell bead of disc form (L 712), and three cylindrical steatite beads

[1] Its base is 11·5 feet below datum.

[2] The base of this bench is 11·8 feet below datum.

[3] At a level of 9·2 feet below datum.

[4] The bottom of this drain averages 12·1 feet below datum.

[5] The foundations of the later walling are 9·3 feet below datum.

[6] The top of this wall is 5·6 feet, the recess 10 feet, and the base of the wall 11·3 feet below datum.

(L 711) In Pl. CXLV, 3 and 46, are pictured two more beads from this same place (L 687 and L 682), and a third bead (L 689) is shown in Pl. CXLVI, 31. From the southern end come five pottery jars (L 629) similar in shape to Pl. LXXX, 48. All these objects are referable to the Late Period and were found approximately at the level of the sill in the N.E. corner of the chamber.

Room 22 was divided off from the aisle marked 23 by a partition wall built in the Late Period. This wall stands nearly 4 feet high, above a considerable extent of pavement, 13 inches thick.[1] A large opening, 8 ft. 10 in. wide, in the northern wall of this chamber seems to have been the principal entrance to the original pillared hall. The western wall is now only 17 inches high.[2]

The copper tablet (L 982) shown in Pl. CXVII, 13, was found in this chamber, together with some circular pieces of shell inlay (L 757), and the red carnelian bead mottled with white (L 993), illustrated in Pl. CXLV, 26, and again in Pl. CLII, 18.

Destruction by denudation.

The wall upon the eastern side of the original pillared hall has, unfortunately, been destroyed by denudation. But, taking into consideration the fact that it could hardly have extended much farther to the east, and allowing for its being the same distance from the easternmost row of piers, we can estimate the size of the hall to have been 87 ft. 6 in. N.–S. by 85 feet E.–W., that is, practically square. The substantial nature of the brick piers suggests that the roof was very heavy. Indeed, the beams which supported it must have been over 14 feet long. There is a possibility that the shorter spaces between the piers were arched over; but corbelling is the only form of arching that has been met with at Mohenjo-daro up to the present. For the spaces, averaging 9 ft. 7 in., between the pillars to have been arched in this way would postulate a very high roof indeed, unless they were partially corbelled and partially bridged with timber. Moreover, the exceptional thinness of the enclosure walls of the hall compared with its size suggests that the roof could not have been very high or it would have tended to thrust them outwards, despite the substantial support of the piers.

In the destroyed N.W. corner of the hall there are remains of structures of the Intermediate Period, chiefly stretches of pavement (34 and 36), whose upper surface is 14·1 feet below datum level (Pl. XXXV, *b*). As he latter is practically the level of the footing that carries the brick piers, it seems evident that we have here the remains of the original pavement of the hall before it was altered and re-paved in the Late Period. Both stretches of pavement (34 and 36) are at exactly the same level, and each has a thin brick wall along two sides, averaging 12 inches high. The fragment of wall to the north of these broken pavements appears to be all that is left at this point of the enclosure wall of the hall. It now stands about 1 foot high.[3]

Entrances.

Owing to the destruction of parts of the outer wall of the pillared hall, we are unable to say with certainty how many entrances it had. What appears from its great width, 8 ft. 10 in., to have been the principal entrance is situated in the north wall of Chamber 22, i.e., exactly in the middle of the northern wall of the original hall. The sill of this doorway is at a level of 13·9 feet below datum, or just about 2 inches higher than the footing on which the rectangular columns of the hall rest. The jambs on each side of this sill average over 6 feet in height, and the base of the wall here agrees very closely with the foundations of the piers.

There was another, but much less important, entrance in the S.W. corner of the hall before its alteration in the Late Period. This is from Chamber 29, which is

[1] The level of the pavement is 10·3 feet below datum. [2] Its base is 15·2 feet below datum.

[3] Its base is 15·4 feet below datum, about the same level as the base of the footing below the piers of the hall.

7 ft. 6 in. square and of Intermediate date, through a doorway in its eastern wall measuring 2 ft. 6 in. wide, which was very carefully blocked up; so well, indeed, that it has proved impossible to ascertain the level of its sill.[1] As the base of the wall in which this doorway is situated has not yet been cleared, it is possible that the sill will eventually be found at a lower level.

Finds.

In Chamber 29 a fragment of a seal was found (L 899), which from its position can be dated to the Late Period. This is illustrated in Pl. CX, 275. From the adjoining Chamber 30 came the broken chert burnisher (L 514) pictured in Pl. CXXX, 32, a small pottery vessel (L 509), illustrated in Pl. LXXX, 66, together with a second one like it (L 510), a round piece of shell inlay (L 506), and, lastly, a pottery sling-ball (L 513). All these articles belong to the Late Period.

Very little of value was found in the débris that filled the pillared hall :—two copper tablets (L 454 and L 456), the second of which is pictured in Pl. CXVIII, 6, one chert weight (L 544), a cone-shaped pottery bead (L 557), a pottery jar-cover (L 562), two pottery cones (L 564 and L 565) similar to Nos. 11 and 12 in Pl. CXXXIV, and a piece of shell inlay (L 564). Unfortunately, nothing was found that helps us in any way to interpret the use of the building, beyond the fact that at the latter end of the Late Period it seems to have been occupied by one or more shell-cutters, who left behind them a large quantity of both perfect and sawn-up *śank* shells (Pl. CLVI, 20–23), as well as pieces of inlay and beads made from this material. These objects, which were found in the partitioned-off apartments on the south of the hall, some lying on the early paving of the Late Period and others at some distance above it, show that the hall had lost its original importance and was eventually used as a workshop. In some parts, the Late floor was still in use ; in others a flooring of mud was made at a higher level. Twenty-three shells were found in Chamber 27 alone.

Dimensions of hall.

Judging from the absence of walling at the western end of Chamber 14, which lies to the north of the pillared hall, it seems that it was a long hall, 12 ft. 6 in. wide. Its walls, however, are not strictly parallel. Their tops average 4·2 feet below datum and their foundations descend deeply. There is a blocked-up entrance at its eastern end, a little over 4 feet wide, with a well preserved sill.[2] The foundations of the northern wall of the chamber have not yet been examined, but it varies greatly in height. A number of beads (L 746), mostly of disc form and cut from steatite, were found scattered about this hall. One bead of a new form (L 749) is illustrated in Pl. CXLVI, 16. A long piece of inlay, made of shell and of rectangular shape, was also found here (L 745).

Curious constructions.

To the north of this long hall there are three curious constructions of brick, one hidden below some later brickwork to the east, which exactly resemble the circular open-work walls placed around young trees in modern times to protect them. These guards, if we may so call them, are roughly made and average 3 feet in diameter on the inside and 3 feet high.[3] One can be seen in the bottom right-hand corner of Pl. XXXV, *b*. With no stretch of the imagination these structures could be regarded as actual tree-guards, and they seem from their very great depth to belong to the period of a building or buildings lying buried beneath the foundations of the columned hall. That trees were especially planted to beautify a temple or sacred enclosure and that they were provided with guards is well known from ancient Egypt of the period of the Eighteenth Dynasty, and it is highly probable that trees were so planted in even earlier periods. There is no reason, therefore, why the same practice should not have prevailed at Mohenjo-daro.

[1] This doorway can just be seen in Pl. XXXV, *a*.

[2] 5·8 feet below datum.

[3] They are at the very low level of 20·4 feet below datum.

To the west of these guards, there is a fragment of pavement, 1 foot thick, whose surface is 14·6 feet below datum. This is at about the same level as pavements 34 and 36 to the south of it, and may, therefore, belong to the same period or complex of buildings. Just below the surface of the ground, immediately above pavement 34, the piece of painted pottery was found that is illustrated in Pl. XCI, 27. It is probably of Intermediate date.

Annexe.

Block 5.—This was probably an annexe of the block just described, with which some of its walls are in alignment. It lay beneath a small mound that was only slightly lower than the highest part of the L Area; and it was probably the number and comparatively small size of the rooms that led to its better preservation.

Semi-circular wall.

Room 15 is irregular in form owing to reconstruction and later additions. A curious feature is a semi-circular brick wall, one brick (i.e., 11 inches) thick, in the centre of the chamber; it is 5 inches high. Another patch of brickwork to the north of it averages 15 inches high and is about the same level. A seal (L 702) found in this chamber is illustrated in Pl. CXIV, 526*b*, a glazed steatite spacer (L 703) is seen in Pl. CXLVII, 8, and a copper bangle (L 713) is pictured in Pl. CXLIII, 26.

Stairway.

There is a small stairway, 1 ft. 10 in. wide and 5 feet high, at the northern end of the chamber, with five treads left, each 9 inches wide and on an average 1 foot high (Pl. XXXV, *d*). From the fact that the floor below the bottom step is 3·8 feet below datum, these steps seem to belong to the latter end of the Late Period. On either side of the stairway there is a hollow mass of masonry, perhaps intended to form a kind of platform, to which the stairs led up.

On the eastern side of the chamber there are remains of a footing or wall which appears to belong to the Late Period. The mass of brickwork against the southern end of this wall is also of the same date. It appears to be a pavement, as it is now only 4½ inches thick, and its upper surface is at about the same level as the top of the wall.[1]

Edge of mound.

Room 1 has been badly damaged by the total collapse of its eastern wall; the slope of the mound is very steep at this point. The walls at the north and south are of the Intermediate Period and average a little over 5 feet high.[2] The same two walls are prolonged well to the west and enclose Chambers 9, 10, and 11 also, the northern wall even forming part of Chamber 15. The cross-walls that separate these chambers from one another are of later date with foundations averaging 8·55 feet below datum. No antiquities were found in Chamber 1.

Room 2 has also been sadly damaged, only two walls remaining. A thin wall of the Late Period on the west is a little higher than most of the Late Period walls in this block. This wall has a footing, 6½ inches wide, just above its base, and its irregular top averages 3 feet high.

Room 4 measures 10 feet N.–S. and 11 feet E.–W. Its northern and southern walls, as stated before, are of the Intermediate Period, but there are traces here and there of their having been raised in the Late Period. With their additions they average 5 feet in height. There is a broad footing, 9 inches in width, on the northern side of this chamber, which marks the level of its Late Period pavement.[3] In this chamber were found the curious shell object (L 781) that is illustrated in Pl. CLVI, 11, and the two beads (L 743 and L 744) illustrated in Pl. CXLVII, 4 and Pl. CXLV, 47. Other objects include the core of a *sank* shell (L 780) and a pottery ring stand (L 781).

[1] 7·9 feet below datum.

[2] Their bases average 12·4 feet below datum.

[3] 4·6 feet below datum.

Room 5 measures 16 ft. 9 in. N.–S. and 19 feet E.–W. In its northern wall there is an entrance, 2 ft. 8 in. wide, into Chamber 9. The sill of this doorway[1] is on the same level as a footing along the wall and its jambs still stand a little over 3½ feet high. It is possible that there was another entrance into this chamber at the southern end of the eastern wall, but where this wall ends is not at all clear owing to denudation. The top of the western wall of the chamber averages 4 ft. 6 in. high. Near the S.E. corner of the room is a fragment of the original paving, 8 inches thick. As this pavement is lower by 18 inches than the sill of the doorway in the northern wall, it must be of earlier date. A spacer (L 725) made of steatite and similar in form to No. 2 in Pl. CXLVII, but slightly longer, was found here, as also a circular piece of shell inlay (L 726). Both were found above the level of the pavement and belong to the Late Period. **Entrances.**

The dimensions of Chamber 6 are 16 feet E.–W. by 8 ft. 6 in. N.–S. Its eastern wall has been badly damaged, but enough remains to fix the size of the chamber. In the western portion of this room a large stone was found, apparently *in situ*, measuring 2 feet by 1 ft. 7 in. by 1 ft. 2½ in. (Pl. XXXVIII, *b*). It is a natural boulder, dark brown in colour and with a hardness of 5 or over. Its top is flat and polished, and it was possibly used by a leather-cutter or sandal-maker. In the N.W. corner is a block of masonry, 2 ft. 1 in. high, which belongs to the latter end of the Late Period, for the base of the Late wall against which it lies is 3 ft. 4 in. lower.[2] This wall stands 4 ft. 7 in. high. The chamber contained no small antiquities and was filled up with a quantity of broken brick mixed with other débris, pottery fragments, and a large amount of slag, the residue of a brick kiln. **Leather-cutter's stone (?).**

Chamber 7 averages 9 ft. 6 in. E.–W., and 8 ft. 10 in. N.–S. Three of its walls apparently belong to the beginning of the Late Period, for their foundations descend some way.[3] The eastern wall of this chamber is a later addition, and its base is 5 ft. 6 in. above those of the other walls. Two beads, one barrel-shaped and made of limestone (L 716) and the other of disc-form and cut from steatite (L 717), were found in this room together with the bearded pottery head (L 722) that is pictured in Pl. XCV, 15 and 16.

The brick pavement of this chamber, if indeed it ever had one, must have been entirely removed in ancient times. Its level was probably the same as that of the doorway that still exists in its N.W. corner with jambs standing only 1 foot high.[4] The western wall has been considerably thickened, the base of the addition, which is 12 inches thick, being a little above that of the wall against which it is placed. The base of the latter, which is 2 ft. 2 in. high, is 8·8 feet below datum. **Pavements.**

Chamber 8, which is slightly irregular in shape, and Chamber 5 formed a single room before the partition wall was built across it. Along part of its western wall there lies a strip of walling or, more likely, a pavement of the Late Period, which is 14 inches thick.[5] But few objects were found in this chamber ; they comprise :—a pottery jar-cover (L 655), a barrel-shaped bead of steatite (L 656), a rectangular piece of inlay (L 657), and a second bead (L 660), which is reproduced in Pl. CXLVI, 8. A decorated steatite bead (L 668) from this chamber is illustrated in Pl. CXLVI, 49.

Room 9 is 10 feet square. On its southern side is the doorway into Room 5 which has already been described. This apartment has not been entirely cleared ; for here is the survey point by which we have fixed all the levels in the L Area.

It will be noticed that Rooms 10 and 11 are similar to Nos. 1, 4, and 9 ; indeed, they were all made during the latter end of the Late Period by building cross-walls between **Late Period alterations.**

[1] 4·8 feet below datum.

[2] 9·7 feet below datum.

[3] Their bases average 11·7 feet below datum.

[4] Its sill is 6·6 feet below datum.

[5] Its base is 11·9 feet below datum.

the two long walls of Intermediate date. There is nothing left of the pavements of Chambers 9, 10, and 11, but a footing that runs along the inside of the northern and southern walls, averaging 4·1 feet below datum, indicates the probable pavement level. Only in Chamber 11 were any objects found. These comprise a sling-stone (L 730) illustrated in Pl. CXXX, 4, a cylindrical steatite bead (L 731), a barrel-shaped bead of the same material (L 732), and a triangular gamesman (L 734) made in faience; this last is similar in shape and material to Nos. 40 and 41 in Pl. CLIII.

Between Chambers 10 and 11 there is a doorway, 2 ft. 6 in. wide, with a well preserved sill.[1] Its jambs are in good order and stand over 2 feet high, which is also the average height of the walls in the immediate vicinity.

Massive wall of Intermediate Period.

Block 11.—To the north of these rooms, an immensely thick N.–S. wall of the Intermediate Period was found, from either end of which subsidiary walls run eastwards. Of the southern of these, the eastern end now measures 13 ft. 2 in. in thickness, but it was probably once much thicker, as its northern face has been destroyed. The main mass of this walling appears to be no less than 28 feet thick. We have made cuttings in it to ascertain whether it contained chambers or a filling, but it has proved to be solid brickwork throughout. Unfortunately, this wall has been badly damaged by brick-robbers owing to its prominence, and we have no means of knowing whether its upper portion contained chambers, which seems quite likely. Though the faces of this wall are well built, the bricks between them are laid somewhat irregularly and there is frequently more than an inch of mud-mortar in the joints and between the courses.

Batter.

Between this very thick masonry and the northern wall of Chambers 1–15, there is a space varying from 8 inches below to well over 1 foot wide at the tops of the walls, since the faces of both these adjacent walls have a pronounced batter. The southern wall is 5 degrees and the northern wall 4 degrees from the vertical. The southern wall has also a slight footing.[2] The faces of both walls are good, the bricks being laid in alternate headers and stretchers and bound with gypsum and mud-mortar. The average size of the bricks used is 11 by 5 by 2¼ inches.

Owing to the depredations of brick-robbers, the northern subsidiary wall is lower than the southern wall. The levels below datum of the three corners of this mass of walling which still remain are given in the footnote below.[3]

On the top of this wall (Section 12), north of Chamber 11, was found the black steatite seal (L 785) which is illustrated in Pl. CXV, 542. From its level it belongs to the Late Period.

Section D

Drain.

Section D is separated from Section C by a street averaging 9 feet in width (40) (Pl. XXXII, *b*), at the southern end of which is a much-damaged drain, 5 inches wide and deep, which is still covered in places with bricks laid flatwise. This drain slopes towards the north at an incline of 1 ft. 5½ in. in a length of 32 feet and eventually peters out. The top of the cover of the drain at its northern end is 6·4 feet below datum, and it therefore belongs

[1] Level 5·8 feet below datum.

[2] At a level of 11·4 feet below datum.

[3] S.E. Corner:—Top, 6·3 feet; base, (?). S.W. Corner:—Top, 5·1 feet; base, 17·3 feet. N.W. Corner:—Top, 15·6 feet; base, 17·4 feet. The base levels of the two inner corners do not agree with those of the outer corners; they average only 13·9 feet below datum. Probably the ground was not levelled before the laying of the foundations.

to the Late Period. At the south, the drain turns to the east at right-angles along the street between Blocks B and C, and is lost beneath a pavement of the Late Period.

On the west, a short stretch of Intermediate walling at the southern end of the street is followed by a narrow wall of the Late Period, 3 ft. 2 in. high.[1] Proceeding still farther to the north, there are the wide foundations of another Late wall which averages 1 foot high.[2] And beyond this, at the northern end of the street, some rather indefinite masonry, also of the Late Period, still stands about 1 ft. 8 in. high.[3]

The three blocks into which Section D is divided are separated from each other by thick walls of the Intermediate Period.

Block 1.—Block 1 is self-contained and is enclosed by Late Period walling, except on the southern side, where some remains of earlier walling appear. Unfortunately, owing to much denudation and brick-robbing, but few of the doorways remain, the greater part of what is left being merely the foundations of walls. **Disappearance of doorways.**

Chamber 41 in the N.E. corner of the block is somewhat out of the square; it averages 14 feet long E.–W. by 7 feet N.–S. The N.E. corner is about 2 feet high. In its southern wall is a doorway only 2 feet wide and with no trace of a sill. There was no pavement in this chamber, and it was practically bare of antiquities, except for the interesting piece of shell-inlay (L 506) illustrated in Pl. CLV, 51.

Chamber 42 is more interesting. Its southern and eastern walls, the former of which rests on an earlier wall of the same period, are of Late date. The eastern wall now stands only 14 inches high. A well-defined footing, 5·2 feet below datum, on the southern side of the chamber gives us the probable level of the now destroyed pavement and the height of the lower wall, of which the footing forms a part. At the western end of the chamber is a ring of bricks, 2 ft. 2 in. in diameter inside, made of a double thickness of brick, i.e., 5 inches, placed in two layers with their ends upwards. The top of the ring, which is some 5 inches below the level of the footing of this chamber, probably served as a jar-stand. The top of a piece of thin walling to the east of this ring is on about the same level. Three small broken pieces of ivory and a few fragments of corroded copper were all that was found in this room. **Brick jar-stand.**

Chamber 43 measures 12 ft. 2 in. E.–W. by 7 ft. 4 in. N.–S. Three large storage jars found in it were too badly broken to be reconstructed. The N.W. corner, which is also the corner of the block, is 2 feet high.[4] At the S.E. corner of the chamber, a later wall lies partly on the Intermediate wall, and is continued to the south where it forms a mass of somewhat indefinite walling in the N.E. corner of Chamber 44. A pottery bull (L 763) and a piece of shell-inlay (L 764) were the only antiquities that were found here. **Storage jars.**

Chamber 44 is a long narrow apartment, measuring 62 feet long N.–S. by an average of 10 feet wide. Its eastern wall, which is 3 feet thick and was originally well built, is 2 ft. 7 in. high.[5] This wall is now very indefinite, especially at its northern end, owing to alterations. From the fact that two, if not three, piers are incorporated in it, it seems that this long corridor-like apartment 44 was cut off from a large hall, leaving Chamber 45, at some date not long after the hall was built. The thin wall at the southern end of the chamber on the eastern side is just under 2 feet in thickness and is 2 feet high.

At the southern end of Chamber 44 (Pl. XXXVII, *d*), there is a well-constructed ablution place. Its bricks measure 10 by 5¼ by 2¼ inches, having, perhaps, been cut down from a larger size. This floor is laid in two courses: first, bricks of ordinary size, 11 by 5 by **Ablution place.**

[1] Its base is 6·4 feet below datum.

[2] The base of this is 6·95 feet below datum.

[3] Base 4·4 feet below datum.

[4] Its base is 4·8 feet below datum.

[5] The foundations of this wall average 3·9 feet below datum.

2½ inches, then a layer of ashes 2½ inches thick, on which were laid the smaller bricks above-mentioned. Around the bath, which slopes southwards,[1] there is the usual border of bricks set on edge and standing 2½ inches above the level of the pavement. A low wall, 1 ft. 6 in. in height, rests on the western end of the ablution pavement. In the middle of the chamber, a little to the north of the bath, there is a fragment of the original paving, 4·6 feet below datum. A collection of thirty-five *śank* shells was found in the chamber above pavement level, many whole and others partly sawn up. Except for these, the chamber contained nothing of importance.

Hall with rectangular piers.

Chamber 45 is of great interest. It seems originally to have been a large hall whose roof was supported by rectangular piers, of which four and possibly a fifth still remain. Some of these piers are seen in Pl. XXXVII, *b*. And it may be that yet more will be found when the later constructions that still encumber a great portion of this block have been removed. The four existing piers vary slightly in size ; they average 6 feet by 3 ft. 6 in. in thickness and 1 ft. 9 in. in height.[2] Exactly how many piers there originally were it is impossible to say without further clearance. But it is probable that if they were all the same distance apart, namely, 7 ft. 8 in., there were two rows of five piers each. The remaining piers cannot be compared in point of accuracy with those of the great hall in Section C, though they are in a better state of preservation. The hall in Section C was probably built first, and this later hall was perhaps a poor imitation of it.

The three piers that still remain of the western row are in a fairly good state of preservation, but the southernmost is now considerably smaller than the others and measures 5 ft. 2 in. long by 2 ft. 10 in. in thickness. A footing on the eastern and southern sides of this pier, however, seems formerly to have been part of it ; if this was so, this pier would agree in size with the others.

Stands for storage jars.

In the northern end of this chamber there are five circular pits, averaging 2 feet in inside diameter and made of a double thickness of bricks placed on end. These were evidently made to hold large storage jars. That they are of early date is clearly proved by a pier having been built partly over one of them. The best preserved pit was full of egg-shaped pieces of badly burnt clay of unknown use, all very much of the same size and averaging 4 inches long by 2½ inches in diameter. These are the exact shape of sling-balls, but larger in size. A few painted potsherds were found in this portion of the block, but the painting was confined to plain bands of black. This part of Chamber 45 was, apparently, occupied at the end of the Late Period by shell-workers, for five whole *śank* shells (L 579) as well as numerous pieces of unfinished shell-inlay (L 494, L 517–22, L 549, L 552, and L 561) were found here. Some of the latter were of the shape illustrated in Pl. CLV, 33. An unusual piece of inlay (L 568) is shown in Pl. CLV, 64. Amongst other finds were two irregular pieces of crystal (L 483) and a bead (L 550, Pl. CXLV, 8). Seven pottery jars (L 546–7), all of the type illustrated in Pl. LXXX, 44, certainly belong to the Late Period.

Shell-cutter's workshop.

In the latest period there seems to have been an entrance into Chamber 45 from Chamber 44 by a doorway at the northern end of the eastern wall of the latter chamber. This was partially blocked up, but its sill seems to have been on the same level as the fragment of pavement, one brick thick, to the east of it, namely, 6·1 feet below datum.

Door-socket.

Chamber 47, which was built within the hall during the Late Period, had a pavement 6½ inches thick.[3] The thick wall west and south of this pavement, now only 4½ inches high,

[1] To a level of 3·1 feet below datum.

[2] Their bases are at an average level of 5·8 feet below datum.

[3] Its surface is 3·4 feet below datum.

must have been part of the original walling of the chamber. A door-socket (L 436) and a *sank* shell (L 435) were lying on the pavement.

The structures immediately to the south of 47 in the space marked 48 are very indefinite. To the east there is a stretch of pavement of the Late Period, 8½ inches thick, which in all probability is part of the pavement of the original hall.[1] The walling on the south, a little over 1 foot high, is a later addition, for its foundations are 2 feet above the pavement. Nothing whatever of interest was found in this space.

Chamber 49, which measures 10 feet E.-W. by 6 feet N.-S., is well-defined. A considerable stretch of paving still remains,[2] and the Late Period walls that surround it average 7½ inches high. Except for one agate bead (L 420) of little interest, nothing was found here.

No trace remains of any paving in the simple enclosure (50), which is bounded on all sides by walls of the Late Period. Here two pieces of painted pottery (L 530) decorated with black lines on a red slip, and numerous pieces of shell-inlay were found (L 519, L 527, L 528, and L 542). This last piece is illustrated in Pl. CLV, 38. All these objects were on a level well above that of the long stretch of Late Period pavement just to the north.

Shell-inlay.

The double Chamber 51 and 52 is bounded on the east by walling of the Late Period, well below the foundations of which a stretch of somewhat earlier paving, 5 inches thick, was found at the level of 4·5 feet below datum. The foundations of the stretch of Late walling over the eastern portion of this pavement are 14 inches above it. The portion marked 51 is bounded on the south by an Intermediate wall, upon which a thinner wall of later date was subsequently built. To the west is the thin wall of the later part of the Late Period which served to cut off the long apartment 44 from the original hall. Against it lie fragments of walling and pavement at various levels,[3] belonging to the latter end of the Late Period.

The level of the latest pavement of this double chamber seems to have been 3·6 feet below datum. Some pieces of shell-inlay (L 774 and L 775) were found here, the first of which is seen in Pl. CLV, 57, and the second resembles No. 33 in the same plate, except that only one side is stepped. With the inlay were found two whole *sank* shells (L 735). A pottery jar (L 737, Pl. LXXX, 47) found at the same level as the other objects shows that the contents of this chamber belong to the Late Period. A large bead (L 724), a part of which is unfortunately missing, came from Chamber 47; it is seen in Pl. CXLV, 53.

Gallery.

Chamber 81 to the south of, and outside the block seems to have been a long gallery (Pl. XXXVII, *a*). It is not a corridor, for it was never open on the east. Its dimensions are 64 feet long E.-W. and 9 ft. 2 in. wide N.-S. This gallery certainly belongs to the Intermediate Period, as its walls all go deep. It seems probable that the southern wall was raised in the Late Period; if so, the additions were very carefully made.

Block 2.—The long narrow Block 2 is better preserved and at a slightly higher elevation than Block 1.

Well-preserved doorway.

Chamber 56 (Pl. XXXVII, *b*) measures 11 ft. 3 in. by 10 ft. 8 in. and has a well-preserved doorway, 2 ft. 7 in. wide, in its southern wall.[4] At one time this chamber together with No. 59 formed a single apartment, which was subsequently subdivided by a thin partition-wall, 1 foot in thickness, which now stands 2 ft. 4 in. high. Judging from the levels, this

[1] The base of this pavement is 5·8 feet below datum.

[2] At a level of 3·1 feet below datum.

[3] Their foundations average 4·2 feet below datum.

[4] The sill of this door is 4·2 feet below datum, and the base of the wall is about the same level.

partition-wall seems to have been built not long after the construction of the original chamber and before its pavement was laid. In the southern wall of Chamber 59 there is a doorway which appears to have been cut after the partition was built.[1] The N.W. corner of the room, which is also the corner of the block, stands 1 ft. 6 in. high, with its base 2·1 feet below datum level. Nothing of value was found in either of these rooms, except the steatite spacer (L. 809) seen in Pl. CXLVII, 10, and Pl. CLVII, 20, which is to be referred to the Late Period.

Chamber 55 has two doorways, one in its southern wall communicating with Chamber 54 and a second opening into Chamber 60, 61. The sill of the western door is 3 feet wide and its jambs are now 2 ft. 4 in. in height.[2] Of the other door the sill is at about the same level as that of the first. No traces remain of the pavement of this room, but it was probably at the same level as, or slightly below, the sills of the doorways. No antiquities were found in this chamber.

Reed-matting. Room 54 measures 13 ft. 2 in. long by 6 feet wide. Along its eastern wall, which is 2 ft. 8 in. high, there is a narrow footing 7 inches above the base of the wall.[3] A jar-cover (L. 801) found in this room lay above the level of the footing. In the filling of this chamber fragments of matting were discovered that may originally have formed part of its roof. These were of reed and very coarsely woven.

Chambers 60 and 61 were originally one apartment, 25 feet long by 12 feet wide, which appears to have been subdivided by a thick wall, now 1 foot high, whose base is 2 ft. 9 in. higher than the eastern wall of the room.[4] This block of masonry may, however, be a fragment of a pavement rather than the remains of a wall. South of it there is a piece of walling, now standing 1 ft. 5 in. high, whose base is a little higher than the adjacent wall referred to above. According to the traces which still remain of the original paving of this chamber, it was 7 inches thick and its surface 4·2 feet below datum.

Wheat. In Chamber 60 a quantity of wheat was found at pavement level. This wheat (L 855) was possibly stored in a basket, of which all traces have long since disappeared. The wheat itself is badly carbonized, but the majority of the grains are whole.[5] A pottery jar-cover (L. 805) was also found here, and a *śank* shell (L 810).

Room 62 is separated from Room 61 by a partition-wall 1 ft. 6 in. thick and 1 foot high. The long thin wall standing 2 ft. 6 in. high on its southern side belongs to the latter end of the Late Period.[6] This room, which appears at one time to have formed part of a single large apartment with Chamber 60, 61, once communicated with Chamber 68 to the west by a doorway, 3 ft. 3 in. wide, with jambs surviving only to a height of 16 inches above its sill.[7] This doorway, which is opposite a stairway, was blocked up later.

Staircase. On the eastern side of Chamber 62 there is a small staircase of four treads, each 9 inches wide and an average of 7 inches high. The present height of the stairway is 3 ft. 6½ in., there being two treads missing at the base. This stairway appears to have been built in the beginning of the Late Period and repaired later, when the supporting wall on the north was added. If this flight was originally continued, as is probable, to the eastern end of the two walls between which it is set, it would have reached a height of about 13 feet, that of the roof or of the floor of a second storey. Near the doorway that once communicated with

[1] Its sill is 2·9 feet below datum and the jamb on the west of it now stands 4 feet 1 in. high.
[2] This sill is 2·3 feet below datum.
[3] The base is 4·3 feet below datum.
[4] The base of this adjacent wall is 4·1 feet below datum.
[5] For an account of Dr. Stapf's examination of this wheat, see Chap. XXVIII.
[6] Its base is only 1·6 feet below datum.
[7] The sill is 0·4 feet below datum.

Chamber 68, a large natural limestone pebble used as a door-socket (L 791) was picked up. No other antiquities were found in this chamber.

Shells and shell-inlay. Chambers 53, 64, 65, and 66 (Pl. XXXVII, *d*) are probably parts of one large room, which was subdivided by partition-walls which now average 2 ft. 7 in. high with foundations descending an average depth of 3 feet below datum. Eleven *śank* shells were found in Room 53 at a level just above the base of the thick wall to the east. With these was the piece of shell-inlay (L 850) pictured in Pl. CLV, 31, and a small limestone marble (L 876).

Sling-stone. In Chambers 64 and 65 a considerable area of pavement still remains *in situ*.[1] A thin wall, 1 foot thick and standing 16 inches high, forms the southern sides of Rooms 63, 64, and 65; but it requires further examination, for it is possible that its uppermost bricks hide a drain. The stone sling-stone (L 642) pictured in Pl. CXXX, 5, was found in Chamber 65.

Chamber 67 properly belongs to the block, as there is a doorway, 2 ft. 6 in. wide, leading into it from Chamber 63. The sill of this door[2] is well preserved and its jambs are now 2 ft. 6 in. high. The remains of walling and paving at the southern end of this chamber are difficult to understand without further clearance. No antiquities were found in this room.

Well. In the region marked 80, there is a well, 5 ft. 10 in. in diameter, which is constructed of wedge-shaped bricks, 10½ by 2½ by 4½ to 5½ inches. The steening of this well is only a single brick in thickness and its masonry is very bad, broken joints being common. Its present coping most certainly belongs to the latter end of the Late Period.[3]

Block 3.—Block 3 has been sadly denuded and but little remains of its original buildings. It is, nevertheless, interesting because of the unusual objects that were found in it.

Court. Court 69 is a large open space surrounded by walls of the Late Period. The base of the wall that bounds its eastern side and now averages 2 ft. 6 in. high is 2·1 feet below datum. Along part of its northern side there is a wall of the Intermediate Period, whose foundations go down deep. The fine, well-built western wall, which is considerably out of alignment, now stands over 4 feet high.[4] The northern end of this wall has a definite face which is slightly battered and almost touches another wall which has been sadly damaged by brick-robbers.

Filling of potsherds. In the southern wall of the court there is a well-built doorway, 2 ft. 10 in. wide, with jambs standing 2 ft. 4 in. high and 19½ in. thick. The filling of this court was a mass of potsherds, evidently the residue of a kiln. Some of this filling is seen in Pl. XXXVII, *c*. Very few of the jars were whole, the majority being in pieces or so twisted in firing that they were thrown away. All this pottery belongs to the Late Period and some of the shapes are similar to those in Pl. LXXX, 1–8. Other forms of pottery found here are L 865, L 886, L 895, and L 891, illustrated in Pl. LXXXI, 1, 3, 20, and 49; also L 885 and L 887, pictured in Pl. LXXX, 2 and 6. Jar-covers were common, such as L 820 and L 874, illustrated in Pl. LXXXII, 21 and 49. One bead (L 818) from here is shown in Pl. CXLVI, 15. We also recovered the pottery bull (L 918) seen in Pl. XCVII, 14, of which a second view appears in No. 21 in the same plate. Fifteen *śank* shells were also unearthed in this court.

Chamber 68 measures 21 ft. 4 in. long by 6 feet wide and is entered from opposite the stairway in Chambers 62 and 63. Its western wall stands 19 inches high with its base only 1 foot below datum. There was possibly once a doorway on this side of the chamber also, but the whole length of the wall is now too low for any trace of the sill to be left. Below

[1] Its surface is 3·7 feet below datum.

[2] 3 feet below datum.

[3] This is 2·3 feet below datum.

[4] Its base is 2 feet below datum.

this wall there is either another wall or a drain whose upper surface forms a kind of footing. The only antiquity found in this chamber was a pottery beaker (L 814), similar to Pl. LXXX, 12.

Dump for kiln refuse.

The space of ground represented by Nos. 70, 71, 72, 73, and 74 (Pl. XXXVII, *c*) has various constructions scattered over it that have suffered greatly from the depredations of brick-robbers. The robbing of brick from here seems to have taken place at the latter end of the Late Period, when practically the whole of this region was used as a dump for kiln refuse, implying that there were kilns in the immediate vicinity. In the S.E. corner of this space (71, 72) there is a small rectangular pier, measuring 2 ft. 6 in. by 2 feet. As its foundations go down well below the adjacent walls of the Late Period, this pier was probably built in the earlier part of that period, or it may possibly belong to the latter end of the Intermediate Period. A second pier to the north of it is seen in the foreground of Pl. XXXII, *d*. Another pier immediately to the west awaits clearance. In the S.W. corner of the space (73, 74) there is a stretch of pavement, 5 inches thick, against a wall of the Late Period, standing 2 ft. 4 in. high, which is seen in Pl. XXXVI, *d*.[1] The most interesting feature here is two N.–S. rows of three and two rectangular piers respectively, each pier of which averages 3 feet by 1 ft. 9 in. in section and stands an average of 1 ft. 6 in. high.[2] To the west of these, three more or less perfect limestone rings were found in a row together with a fragment of a fourth. The bases of these rings, which were all about the same height, were 2·25 feet below datum. A photograph of them, taken before they were removed, is seen in Pl. XXXVIII, *f*, and one of these rings is also illustrated in Pl. CXXX, 30.

Limestone rings.

The first from the east (L 1012) measures 1 ft. 7 in. in diameter by 1 foot high; the central hole is 5¼ inches in diameter. The second ring (L 1013) is of the same size, but the diameter of its hole is 6 inches. The diameter of the third ring (L 1016) is 1 ft. 6 in. and it is 9 inches high with a hole 6 inches in diameter. The workmanship of these rings is somewhat rough and they also show a certain amount of weathering. The material of which they were made is a cherty limestone.

In the region 72 a fragment of a steatite seal (L 904), pictured in Pl. CX, 316, was found, together with a pottery dish (L 405). 71 yielded two pottery dishes (L 977 and 957), a shell bead (L 987) illustrated in Pl. CXLV, 15, and two broken pottery figures, one of a female deity (L 958) similar to Pl. XCV, 13, and the other of a male seated figure (L 959) similar in conception to the figure illustrated in Pl. XCV, 19.

From the region 73 came the paste figure of a monkey (L 1033) seen in Pl. XCVI, 12; and from 70 twenty-four *śank* shells.

In the space marked 70 there were also found pottery vessels (L 823 and L 826) similar to those pictured in Pl. LXXX, 11, and the following utensils (L 829, L 847, and L 849), which are illustrated in Pl. LXXXI, 41 and 42, and Pl. LXXX, 30. The clay rhinoceros (L 1108) pictured in Pl. XCVII, 10, was also found here.

Bathroom.

The little group of rooms (77, 78, and 79) on the southern side of this large space are a maze of walls and pavements of various periods. In the S.E. corner of Chamber 79 there is a pavement, 4·7 feet below datum, surrounded by a low wall, 14 inches thick and 18 inches high. The pavement of a bathroom (78) on the western side of this room slopes towards its S.E. corner.[3] An edging of bricks laid on end projects 3½ inches above the

[1] The top of this pavement is 2·4 feet below datum and the base of the wall against which it lies is 14 inches below that.

[2] Their bases lie at an average depth of 3·3 feet below datum.

[3] The top of the pavement of this bath is 3·8 feet below datum.

pavement around the bath. The bricks that form the pavement measure 11 by 6 by 2½ inches. The sill of a doorway, 2 ft. 9 in. wide, in the eastern wall of this ablution place has well-preserved jambs rising 12 inches above it.[1]

Between Rooms 78 and 79 there is an early wall whose irregular top averages 4·1 feet below datum.

In Chamber 79 were found a pottery jar (L 857) similar in shape to No. 6 in Pl. LXXXI, and a jar-cover (L 858) of the same type as Pl. LXXXII, 47. The basin (L 878) seen in Pl. LXXXII, 20, was also found here, together with a model pottery bull (L 879).

Chamber 77 measures 21 feet by 7 ft. 8 in. Its eastern wall now stands 14 inches high.[2] The other three walls are of earlier date and probably belong to the beginning of the Late Period. They stand 4 ft. 3 in. high with their bases a depth of 5·9 feet below datum. There are also traces of still earlier walling deep down in the interior of the room. The southern wall is especially interesting, as it shows no less than three additions.

Head of statue.

A drain of the latter end of the Late Period, whose channel measures 6¾ inches wide and 11 inches deep, divides this room into two portions. This drain, which overlies a wall, runs out through an aperture, 15 inches high by 5¾ inches wide, in the northern wall of the chamber (Pl. XXXVI, *b*). The floor of the aperture is composed of three bricks laid on end at a slight angle to prevent the possibility of the water flowing back into the chamber. The head of a statue of yellow limestone (L 898) was found lying on the top of the drain at a level of 2·3 feet below datum. This head is seen in Pl. XCIX, 7–9. A plain pottery dish (L 932), and a pottery cone (L 933), similar to No. 11 in Pl. CXXXIV, were the only other antiquities that were found here.

Between Rooms 76 and 77 there is a stretch of pavement,[3] to the west of which is a drain, whose channel is 9 inches wide and 8 inches deep.[4]

Body of statue.

The excavation of Chamber 75 is unfinished. The base of its eastern wall which now stands 1 ft. 10 in. high is about the same level as the drain on the east of Chamber 76. In the N.E. and N.W. corners of 75, two of the rectangular piers already mentioned are incorporated.[5] Near the N.W. corner of this room the headless statue (L 950) seen in Pls. XXXVIII, *a*, and C, 1–3, was found lying on its side at the level of 2·5 feet below datum.

Early remains to be uncovered.

Most of the exposed walls of Block 3 unquestionably belong to the latter end of the Late Period; but that there are earlier walls below is proved by the remains found in Chamber 77, which has been excavated rather deeply. This part of the L mound is a considerable height above plain level, and it is certain that there are important buildings beneath the level to which we have already dug.

[1] This sill is 3·1 feet below datum.
[2] The base is 3 feet below datum.
[3] Its surface is at a level of 4·8 feet below datum.
[4] The base of this drain is at a level of 3·8 feet below datum.
[5] These stand 14 inches high and their foundations average 2·8 feet below datum.

CHAPTER XII

HR AREA

AREA HR is situated in the south quarter of the main group of mounds. At the time its excavation was started—in December, 1925—a deep depression divided this area into two well-defined portions, and this, as anticipated, proved later to mark a street (Pl. XLI, *c*). The principal excavation lay to the east of this depression, but the western boundary of the street was also traced for some 300 feet (see plan, Pl. XXXIX).

When the operations ceased at the close of February, 1926, the plan of the surface buildings had been made clear, but the excavated structures proved to be not of one, but of three periods. The salient features in the lay-out here were :—A main street, 35 feet wide, running roughly north and south ; two side lanes running east and west from its eastern side; and a long narrow lane running parallel to the street for some considerable distance and then finally turning westward into it. For convenience of reference the street has been designated " First Street " and the lanes on account of their distinctive features or position, " High Lane," " South Lane," and " Deadman Lane," the last so-called because part of a human skeleton was found at the corner where it turns westward. Neither the eastern limits of High and South Lanes nor the southern end of Deadman Lane have yet been traced. To the east of the street, therefore, (in Section A) are three blocks of buildings to be described in this chapter which are separated one from the other by High and South Lanes, while to the west of First Street (in Section B) we are concerned only with a few chambers on the east side of Houses V and X.[1]

House I.

The southern block consists of House I, a group of buildings mostly of the Intermediate Period, but partly reconstructed at a later date, which is bounded on the north by South Lane, on the west by Deadman Lane, and on the east by only partially excavated structures, while its southern limits are yet undetermined. The most striking feature of this complex of structures is the great difference of level between the northern and southern portions (see Section, Pl. XL).[2] The former, at a considerably higher level, is reached from the lower, southern section by two flights of nine or more steps, which ascend from the

[1] The rest of Section B was excavated in 1926–7 by Rai Bahadur Daya Ram Sahni, whose description follows in Chap. XIII.—[ED.]

[2] The level of the northern court was raised by filling in the interior with sun-dried brick and mud. Simultaneously the two flights of steps from the lower court appear to have been constructed and also the Chambers 23, 24, and 25, the exterior walls of which on the court side were evidently intended to be concealed beneath the crude brick-filling. The interior floor of these chambers was several feet lower than the court level.—[ED.]

N.E. and N.W. corners of Courtyard 10 (Pl. XLI, *a*). Rooms lie to the east, south, and west of this courtyard, but only a few of the doorways are now traceable ; how the other rooms were reached is problematical. In Courtyard 10 is a ring of masonry the purpose of which is uncertain.[1] Seal No. 30 (Pl. CIV) was found in the superficial débris of this courtyard, and numerous small objects of faience and alabaster were recovered at the base of the north wall. On the east of the courtyard is Room 14, the walls of which are built on older foundations (Pl. XLIV, *b*). In this room, at a depth of 6 ft. 7 in. below ground level and close to the western wall, was recovered a head of a human image (HR 910), one of the two which alone were recovered in this excavation (Pl. XCIX, 4–6). The head, 6·9 inches in height and of the white limestone found in the neighbouring hills, is of a bearded figure and, save for slight damage to the nose, lip, and right ear, is well preserved. The hair, elaborately but conventionally treated, is indicated on the top of the head by chevrons, but on the large chignon by horizontal parallel lines. A narrow fillet binds the hair, running round the top of the forehead and crossing the chignon towards its base and dividing it into two unequal parts, the upper and larger being again subdivided into three unequal portions by two oblique incised, parallel grooves. A raised line running obliquely to the fillet across the ear and at the base of the chignon is suggestive of a second fillet or the raised edge of a light head covering.

The narrow, hollow eyes were probably filled in with shell or paste. The ears are mere conventional ovals, without lobes but having a small hole in the centre. The cheek bones are high, the nose prominent, the lips thick.[2] Careful search for the remainder of the image was unsuccessful, though Room 14 was excavated to a depth of 22 feet. At this depth some brick masonry was revealed, which undoubtedly belonged to a still earlier stratum.[3] In this room were also found HR 960, an ivory ornament (Pl. CLV, 48), HR 980, three fragments of decorated pottery (Pl. LXXXVII, 3), and seal No. 482 (Pl. CXIV).

Rooms 8 and 9 were originally one chamber, the cross-walls belonging to a subsequent reconstruction, and Rooms 1 and 2 were similarly originally connected. Traces of brick pavements exist in Rooms 4, 6, and 7. Finds in this area were not numerous, but seal No. 430 was recovered in Room 4 (Pl. CXIII), seal No. 53 (Pl. CV) and HR 1123, an alabaster mace-head (?), in Room 5 (Pl. CLVII, 55 and 60), seal No. 426 (Pl. CXIII) in Room 3, and in Room 8 a shallow cup with small handle (HR 1442, Pl. LXXXIII, 18).

Ascending the flights of steps from Courtyard 10, another large courtyard, No. 18, is reached, the centre of which had a filling of sun-dried bricks. The existing masonry-remains inside this court are principally later additions, but the chambers 23–26 are original structures of the Intermediate Period. A drain on the south of this courtyard runs southward, then eastward under the western flight of steps, and by the north wall of Courtyard 10, and south again at the base of the eastern steps.[4] Although of considerable **Section I.** extent, Courtyard 18 yielded comparatively few antiquities besides seals Nos. 6 and 13 (Pl. CIII), No. 446 (Pl. CXIII), No. 541 (Pl. CXV), and No. 558, the fragment of a vessel with pointed bottom, bearing two pictographs (Pl. CXV). When clearing this courtyard a human skeleton was discovered 3 ft. 9 in. underground, close to the south wall of Room 25. The body, which had been carefully buried, lay on the left side, the head resting on the left hand, the face to the east. As the lower limbs had been displaced by the digger before the find was reported, their original position is uncertain. These skeletal remains, together with those recovered

[1] Similar rings have been found on other parts of the site, e.g. in L Area (p. 165).—[Ed.]

[2] For further accounts of this head, see pp. 44 and 359.—[Ed.]

[3] Probably Early I Period.—[Ed.]

[4] How this drain drops from the upper to the lower level is not yet evident.

in other parts of this site and detailed below, were submitted to Colonel R. B. Sewell, I.M.S., Director, Zoological Survey of India, and were examined by him and Dr. B. S. Guha, of the same Department. For all anthropological details concerning the human remains found in this area, reference should be made to their exhaustive report in Chapter XXX.

Thirteen amber-coloured glass beads of a necklace were found with the skeleton, and on the left upper arm the broken fragments of three ivory bangles. Round the neck were the remains of a metallic ornament, one loop of which was recovered. This proved to be of zinc. Since both the Archæological Chemist who analysed the jewellery, and Colonel Sewell and Dr. Guha, who examined the skeletal remains, agree in assigning a recent date to this burial, it can obviously have no connection with the structural remains or the ancient civilization of this site.

In Room 21 was found the terra-cotta seal No. 431 (Pl. CXIII), and in Room 23 a miniature faience vase (HR 432) and seal No. 236 (Pl. CIX).

Before concluding the description of this block mention should be made of the discovery on 19th December, 1925, on the top of the wall above the western flight of steps in Courtyard 10, of a headless seated alabaster figure (HR 163). Three days later a part of the head of this same figure (HR 193) was found 45 feet to the north, in South Lane, and the next day the remaining part of the head (HR 226) was recovered some 8 feet further to the N.W., in Courtyard 34. After restoration the figure is 16½ inches in height (Pl. C, 4–6). As the three pieces so widely separated were all found in the superficial débris, it seems likely that they were scattered after the site had been destroyed and abandoned, though the image appears to date from a very early period. The figure is of a man seated with upraised knees, the right a little higher than the left, and with the hands resting on the knees. The face is of extraordinary length, exaggerated somewhat by a full and pointed beard, the hairs of which are indicated by incised chevrons. Originally the oblique eyes were filled with shell, paste, or some other substance. The nose is long and well indicated, but all traces of the mouth are lost by the breaking of the face. The ears are well marked but conventionally treated, the lobes being absent. No hair is visible on the head, as though a tight-fitting skull-cap were worn, but a fillet passes over the forehead, the two ends hanging down the back. The body appears to be fully clothed, as the edge of the garment is clearly depicted between the knees. Noticeable features are the long hands and forearms and the receding forehead.[1]

How far the sculpture represents an ethnic type is problematical, and its very archaic appearance may be due merely to the limitations of the sculptor. The image is probably one of the earliest ever recovered in India, and the chevron treatment of the hair of the beard and the rudimentary form of the ear clearly link it with the head (HR 910) found in Room 14.

Of the partially excavated buildings to the east there is little to note, no antiquities of importance having been recovered therein. The little chamber south of Room 29 has a small water-chute in its western wall, and the large earthenware vessel which formerly received the water from this was found *in situ*, but in a broken condition.

South Lane. Before crossing South Lane to Block 2, attention may be invited to South Lane itself. This runs eastward from Deadman Lane, and varies in width from 5 to 6 feet (Pl. XLV, *b*). In this lane at various levels were recovered part of the alabaster image described above (HR 193), the very large stone jar-stand (HR 519, Pl. CLVII, 62), and seal No. 33 (Pl. CIV).

Deadman Lane. Deadman Lane is a narrow alley, varying from 3 to 6 feet in width, and running

[1] For further particulars of this statue, see p. 359.—[Ed.]

northward from the extreme south of the excavated area to the northern corner of House III, where it turns westward to meet the street (Pl. XLII, *c*, *d*). On the west side of this lane, and opposite to its junction with South Lane, is a little enclosure 8 by 4 feet. Within its four walls were found an unfinished seal (HR 1039), a miniature vase (HR 1048–9), and eight beads, seal No. 405 (Pl. CXII), a double convex terra-cotta sealing (HR 1051), with rhinoceros and pictographs on one side and a bull and pictographs on the other (Pls. CXVI, 28, and CII, *i* and *j*), and a collection of miscellaneous small objects including beads, fragments of faience, copper and carved bone, terra-cotta figurines and miniature vessels (HR 1090–1109). This collection of odds and ends suggests that the little enclosure was a dust-bin, and its position lends colour to that presumption.

Before the site was abandoned, the southern part of Deadman Lane was no longer in use, later structures having been built over it (Pl. XLII, *c*). In removing this later filling, and the scanty remains of the latest structures, a faience sealing (Pl. CXVI, 22) and a fragment of a square seal were recovered (HR 166). The waste water from Well No. 1 and the adjoining bathroom No. 11, as well as from the vertical drain in Room 15 of House III, fell into a well-laid brick drain, which ran northward and at the western extremity of Deadman Lane drained into a cesspool on the east side of the street (Pl. XLIII, *c*).

At the point where the lane turns westward, part of a skull and the bones of the **Skeleton 17.** thorax and upper arm of an adult were discovered, all in very friable condition, at a depth of 4 ft. 2 in. The body lay on its back diagonally across the lane. Fifteen inches to the west were a few fragments of a tiny skull. It is to these remains that the lane owes its name.

Block 2, the central and largest block, which lies between South and High Lanes, **Block 2.** consists of several houses, which have been numbered II to VI and are principally of the Intermediate Period, though largely rebuilt later.

Most of the boundary walls of House IV are of this period, but buildings of later **House IV.** date are found on the north side and at the S.E., and the few walls in the centre are equally late. It would appear as if the Intermediate buildings had been demolished, and the later structures of lighter type had decayed, so that what is now revealed is a large courtyard, with doorways opening on to South Lane.[1] Finds in this area were few, the principal ones being HR 426, part of the alabaster image described above, and HR 2656, a miniature alabaster vase (Pl. CI, 14). In the narrow space between the east wall of House II and the west wall of House IV was found seal No. 8 (Pl. CIII).

To the west of House IV is a more clearly defined structure, House II, having **House II.** entrances from South Lane. A narrow passage, No. 5, leads northward to a large courtyard, and on the left is a small chamber (No. 4), with its entrance blocked up. West of this lies the large courtyard, No. 2, having a small room, No. 1, in the N.W. corner. Another large courtyard, No. 6, occupies the N.E. corner, with a small room in the N.W. corner. A flight of eight steps on the west side of Courtyard 6 leads up to Well No. 1 (Pl. XLIII, *b*). This well, 3 ft. 5 in. in diameter, and lined with well-burnt, wedge-shaped bricks, was cleared to a depth of 41 feet, when 4 feet of water was obtained (Pl. XLI, *b*). The most careful examination of the débris of this well failed to yield vessels, potsherds, or other antiquities. As the steening continues to an unknown depth beyond the 41 feet cleared, it is certain that the water level is now higher than in former days, so that the material at the bottom of the well which might contain antiquities of the period has not yet been reached. From the grooves in the edge of the steening, the result of the friction of the ropes in ancient days, it may be inferred that no windlass or other mechanical device was used

[1] House IV has not yet been completely excavated. When its excavation is finished, this view may need some modification. In age and construction it appears generally to resemble House II on the west.—[Ed.]

for raising the water. Much of the carefully laid brick pavement around the well is still preserved and shows the depressions made by the dumping of countless waterpots.

To the south of the small passage leading from the well-chamber to the top of the steps descending to Courtyard 6 are two small, carefully-paved rooms, Nos. 11 and 12, the former of which appears to have been a bathroom, as a drain from it falls into the drain in Deadman Lane (Pl. XLII, *d*). North and east of the well-chamber are the small rooms Nos. 8 and 9, the former opening into Room 7. But few of the chambers in House II could have been intended as living rooms. Nos. 1, 3, and 7 are of reasonable size, but Nos. 8 and 9 are very small. It should be noted, too, that the openings in the north and east walls of No. 6 are merely breaks, not doorways, as the narrow passage 17 and the courtyard 13 are on a considerably higher level (see Section, Pl. XL).[1]

Finds in Nos. 1–5 were few and unimportant, but No. 6 yielded a very curiously inscribed seal, Nos. 471–3 (Pl. CXIV), and HR 2014, a very carefully modelled head of a little faience parrot (Pl. XCVI, 2). In Room 7 were found seals No. 103 (Pl. CVI) and No. 401 (Pl. CXII). A great many small well-preserved earthen vessels were found in the little chamber No. 9, to the north of the well, besides an interesting terra-cotta sealing having an excellently depicted rhinoceros on either side (Pl. CXVI, 10).

House III. North of and contiguous with House II is a group of structures all of the Intermediate Period, and bounded on the west by Deadman Lane. To these buildings, designated House III, there was an entrance over the top of the drain from the lane on the west; the openings from No. 6 of House II were not doorways. From the N.W. corner of Courtyard 13 passages lead to the north and west. At the end of the northern passage, No. 14, is a small chamber, No. 15, on the west side of which a doorway opens into a very narrow room, No. 16, the western wall of which is from 8½ to 9½ feet thick. In this solid brickwork is a small drain-opening, which has been cleared to a depth of 3 feet but the outlet of which has not yet been traced. Clearly this masonry must have carried some superstructure, else the drain would have been unnecessary. An analogous drain in the thick masonry wall north of Room 42 in House VI suggests similarity of purpose and possibly the former existence of a bathroom in each case.[2]

If the western passage leading from Courtyard 13 be followed, a narrow courtyard, No. 17, is reached, having on the south a small chamber, No. 18, containing Well No. 2. This resembles Well No. 1, but has not yet been cleared. North of Courtyard 17 is Room 19 and a curious L-shaped enclosure, without any entrance, which clearly must have served as a solid substructure for an upper storey, while north of Courtyard 13 is a group of small rooms, Nos. 20–4, of which No. 20 has a thick northern wall. Except possibly Chamber 21, all these chambers were originally provided with doorways, which were blocked up when the chambers were filled in, and an additional storey raised above them. That there must have been superstructures above them is plain from the most remarkable feature in this block of buildings, namely, a vertical drain in the corner of Room 15. This consists of well-fitting earthenware drain-pipes, with spigot and faucet joints, embedded in masonry, the bricks of which are laid in gypsum (Pl. XLIV, *a*). This vertical drain leads into a horizontal brick drain, which runs through Nos. 14 and 17 and then, curving round the end of the well-chamber, No. 18, falls into the drain in Deadman Lane (Pl. XLII, *a*).

This area was fruitful in antiquities. In the S.E. corner of Courtyard 13, and 2 feet below the surface, numerous fragments of a large earthen vessel were discovered,

[1] The whole of this house was subsequently filled in and the level raised.—[Ed.]

[2] The masonry is not as thick and solid as might be supposed. There is an old doorway on the south side, which was subsequently blocked up.—[Ed.]

and in and around these many small objects of faience and alabaster, such as miniature vases, balls, and beads, as well as a shell spoon, fragments of ivory, and numerous chert flakes. Further clearance to a total depth of 2 ft. 6 in. disclosed a skull in a large potsherd **Skeleton 3.** (Pl. XLIII, *d*). With this skull were a few fragmentary pieces of bone, but nothing indicative of a complete burial.

The numerous small objects referred to above appear to have been a funerary deposit. Among the potsherds several complete vessels were found, the most striking being HR 465, which is seen close to the skull and touching the wall in Pl. XLIII, *d*. This vase, seemingly a funerary vessel, is decorated with animal figures, one of a fawn being well preserved (Pl. LXXXIX, 2). The position of this burial assigns it to a late period in the occupation of the site, and seemingly when Courtyard 13 was no longer in use.[1] On the northern side of this courtyard were found seals No. 4 (Pl. CIII) and Nos. 317 and 320 (Pl. CX).

By the side of the drain in the passage No. 14, a triangular faience sealing was recovered (Pl. CXVI, 8, and Pl. CXVIII, 9), while the little chamber No. 15 yielded seal No. 200 (Pl. CIX). A stone pedestal with a headless, sitting, sphinx-like bull (HR 1072) was found in Room 19 (Pl. C, 7), and the excavation of No. 22 produced a number of small antiquities at a depth of from 8 to 10 feet, the most important being HR 1053, a bead-like steatite object carved with three monkeys (Pl. CLVIII, 5), HR 1835, an ivory spatula, and seal No. 548 (Pl. CXV).

The partially excavated buildings to the east of House III present no special features. Save for the walls on the extreme east these structures are of the Intermediate Period. In the narrow space between the walls of Nos. 27 and 30, seal No. 285 was found (Pl. CX), and in the S.W. corner of No. 29 fifteen unfinished shell bangles were recovered in a large, broken, decorated pot.

High Lane is bounded on the south by House VI, which is a fine structure of the Late **House VI.** Period, built partly on an earlier house of the Intermediate Period. Some of its walls rise to a height of more than 12 feet, and are remarkably massive, the masonry north of Room 42 being no less than 12 feet thick (Pl. XLII, *a*). When excavating the base of this wall on the south side of High Lane a curious opening, 3 feet high, 1 ft. 11 in. wide, and 2 feet in depth, was revealed. The front was closed to a height of 1 ft. 1 in. by five courses of bricks. The back, sides, and base were solid brickwork, but the top was of earth. Investigation on the top of the wall revealed an opening 1 ft. 10 in. by 1 ft. 6 in. north of Room 42, and after clearance it was discovered that the opening in the lane was the outlet of a sloping, chimney-like passage contrived in the solid brickwork. It appears to have been a rubbish-shoot of some kind resembling the modern *saṇḍas*, the five courses of brick preventing the rubbish from falling straight into the lane (Pl. XLII, *b*). At a depth of 1 ft. 6 in. below this opening was a smaller one, 9¼ by 6⅛ inches, which looked like the outlet of a drain, but which was not traced further. 1 ft. 5 in. east of the rubbish-shoot is a line of half-bricks, masking a vertical drain in the thickness of the same high wall. Clearance at the foot of the wall proved that it terminates in a brick drain, which crosses from the south side of High Lane, and then runs eastward. It seems plain, therefore, that some structures formerly crowned this solid masonry of House VI.

The chambers, Nos. 38–44, have been only partially cleared. At present access to the high walls of House VI is by way of Room 46 and a staircase at the S.W. corner, but the east wall of Room 48 is certainly of late date. Finds in this area were noticeably few,

[1] The courtyard is of the Intermediate Period. The burial, therefore, may be either post-Intermediate or post-Late Period.—[Ed.]

but seals No. 164 (Pl. CVIII) and No. 141 (Pl. CVII) were found in Rooms 38 and 40 respectively, and a perfectly preserved miniature faience vase, HR 431, only 1 inch in height, was discovered in Room 39.

Area between Houses III and VI. Between Houses III and VI is an area where structural remains are markedly scanty, though traces of walls of the Intermediate and Early Periods still exist. No part of the site, however, was more prolific of small but interesting finds, and here were found a faience sealing (Pl. CXVI, 8), seals 61, 63, 67 (Pl. CV), 156 (Pl. CVIII), and HR 1964 = Pl. CXIV, 514, as well as HR 1625, an ivory amulet, HR 1858, a fragment of carved ivory with pictographs, HR 1924, a crocodile head carved very realistically in shell (Pl. XCVI, 14), and HR 1935, an interesting figurine of a bird with outspread wings (Pl. XCVI, 1). With the exception of the sealing, No. 567, which was found at a depth of 7 ft. 6 in., the rest of the antiquities was found between 10 and 13 feet,[1] that is at a greater depth than most of the antiquities recovered in this excavation. The open space east of this area and of Rooms 43 and 44 had a deep filling of sun-dried bricks and was entirely sterile.

Near its western end High Lane turns northward, and then westward, to meet the street. North and south of this western prolongation of High Lane are buildings VII and

House V. V respectively. The latter, as so far cleared, is a structure of the Intermediate Period. In the long, narrow chamber (No. 50), at its N.E. corner, seal 69 (Pl. CV) was recovered, but the paucity of finds in this part of the site was most marked.

House VIII. But it is on the north side of High Lane that we have in House VIII a building of the Intermediate Period[2] at once well preserved and presenting an intelligible plan. The entrance at the west end of High Lane gives access to a courtyard, No. 5, having in the N.W. corner what may well have been a porter's lodge. Turning to the right, a second large courtyard, No. 18, is reached. On the south and east sides of this courtyard, which is 33 by 32 feet, are small chambers. The first room on the south, No. 6, contains Well No. 3, the next, No. 7, is a bathroom having a floor of finely jointed bricks (Pl. XLV, *a*). In the wall between the well and the bathroom is a small corbelled opening, through which water-pots could be passed from the well-chamber. A horizontal drain of earthenware pipes encased in brickwork was discovered in Room 9. Small rooms of irregular shape, Nos. 10–13, run along the east side of Courtyard 18, and in the south face of the thick wall of No. 13 another vertical drain of earthenware pipes was revealed. But the most striking room is No. 17, on the west side of the courtyard, a curious chamber with a narrow exterior passage and having four niches in the inside walls. A very remarkable feature is the rounding of the exterior face of the S.W. corner of the wall while retaining a rectangular corner interiorly. To this exterior passage there was originally an entrance from Courtyard 5, but this had been closed by a later wall. Similarly, the walls in the centre and N.W. of Courtyard 18 are later additions.

On the north of Courtyard 18 are three chambers, Nos. 14–16, which appear to be a northern projection of House VIII. Steps lead from No. 14 to No. 15, but the latter has no visible entrance at ground level. No. 16, the spacious room to the north, had, however, an entrance from the outside, but access to the south and east of the room is now cut off by two low walls of the later period, which form a little ante-chamber at the N.W. corner.

The walls of the structures around Courtyard 18 are from 4 to 4½ feet in thickness, and would seem to have carried some superstructures. The presence of the vertical drain in Room 13 lends support to this supposition. This drain led into an open brick-drain, which

[1] They are almost certainly of the Intermediate Period.

[2] Built probably in Intermediate II, slightly modified in Intermediate I and subsequently burnt down. For further particulars of this interesting house see *supra*, pp. 17–20.—[Ed.]

ran along the east side of Courtyard 18, and terminated in a large earthen vessel, 2 ft. 3 in. in depth, sunk in the ground by the doorway of Room 11, and which would doubtless be emptied by hand, as is still frequently the case in Anglo-Indian bungalows.

Compared with the extensive courtyards, the smallness of the rooms around Courtyard 18 is remarkable. Nos. 15 and 17 are of reasonable dimensions, but Nos. 7–13 seem mean and insignificant.[1] In such a climate, however, as that of Mohenjo-daro a great deal of time would be spent in the open air, and light erections of thatch may have been erected in the courtyards, and most of the domestic work carried out there.

The walls of House VIII are generally built of the bricks common to this area, which averaged 11¾ by 5¾ by 2¼ inches, but in the south wall of Courtyard 5, on the right of the entrance from High Lane, are some bricks of exceptional size, measuring 14 by 7 by 3½ inches. Bricks throughout area HR are usually laid in puddled mud, but in House VIII they are laid in gypsum.[2]

Finds in this extensive building were few, and only one seal, No. 224 (Pl. CIX), was recovered in the exterior passage of Room 17. Room 12 yielded HR 2445, a small shell spoon, Room 9 a small faience ram, HR 2013 (Pl. XCVII, 1), and Courtyard 18, HR 1797, a small wavy ring with white dots on a red ground (Pl. CLVII, 10), and HR 2045, a terra-cotta ball with an incised pictograph like the letter H. Ashes, charcoal, and some carbonized grain were also found in this courtyard and in several of the rooms.

House VII. West of and abutting on House VIII is House VII, a building also of the Intermediate Period. This is bounded on the south by the prolongation of High Lane, and on the west by the street. The boundary walls are well preserved, and two rooms, Nos. 3 and 4, are traceable on the east side, and one chamber, No. 2, in the centre, but many of the interior walls have disappeared. Traces of brick pavements exist near the western wall. Access to this structure was by two doorways opening into High Lane.

In Courtyard 1 were found seals 247 and 252, the latter of unusual form, with a device on either side (Pl. CIX), and in Room 4 a small wavy ring, HR 1960, resembling HR 1797 referred to above (Pl. CLVII, 12).

House IX. North of House VII and separated from it by a blind alley, in which are well-preserved brick drains (Pl. XLIV, *c*), is House IX, which abuts on the western wall of the northern projection of House VIII. Though not yet completely excavated, its plan is comparatively clear. Its S.W. courtyard, No. 19, which contains Well No. 4, had its entrance from the alley on the south, but this was closed at a later period. On the east of the well is a brick pavement, having to the north a solid block of masonry, 6 feet thick, to the top of which lead four steps. This is the lower part of a staircase giving access to a now-lost upper storey. East of the pavement is a long narrow room, No. 24, having an entrance from the alley and a doorway leading into No. 25, which latter has also a doorway on the north. The numerous niches in the south wall of Room 23 are noteworthy features. Of the three rooms to the north, No. 20 opens on to the street, while No. 21 is connected with the well-chamber. Room 22 has no visible means of access,[3] but it has a thick masonry wall on the south, which is evidently the remains of a staircase of which the bottom four steps are preserved.

[1] These small rooms on the ground floor were probably for menials. The living rooms would be mainly upstairs, as in most of the larger houses at Mohenjo-daro. See p. 19 *supra*.—[Ed.]

[2] It has since been ascertained that gypsum is used in combination with mud in most, if not all, of these buildings.—[Ed.]

[3] Evidently intended as the solid basement of an upper storey room, like so many chambers without entrances at Mohenjo-daro.—[Ed.]

Very few antiquities of any kind were found in House IX, but in Room 21 was found HR 2554, one of the many faience squirrels recovered at both Mohenjo-daro and Harappā (Pl. XCVI, 7).

Street. Only the northern end of the street was completely excavated (Pl. XLI, *c*). It is some 35 feet in width, and the buildings fronting it preserve a good alignment. No traces of any pavement were recovered. The antiquities found in the excavated portions of the street were few, but included seal 550 (Pl. CXV), a roughly blocked-out seal HR 564, a shell object, HR 1490, resembling a pipal leaf (Pl. CLV, 61), and HR 2528, a small shell spoon (Pl. CLVI, 28).

But the most interesting feature in the street is the cesspool by the west end of Deadman Lane (Pl. XLIII, *c*). This is 5 ft. 5½ in. by 4 ft. 4 in. and 6 ft. 9 in. in depth, and built of brick masonry, but having merely hard earth at the bottom. Drains fall into it from the north of the street and from Deadman Lane, while on the south side is a drain-like opening to carry off the overflow.

Section B. Block 2. The west side of the street was traced for some 300 feet, but only a few chambers on the east and south of Houses V and X respectively were partially excavated. These are principally of the Intermediate Period, the walls facing the street being exceedingly well built, and 5 feet in thickness. As these buildings were only partly cleared, interest in this part of the site is concentrated on the numerous and varied finds, and particularly on the skeletal remains discovered in Room 74.

House X. On the south side of Room 126 was a pot set in a pavement of one course of bricks, and on the north side, under two courses of bricks and at a depth of 10 feet, a collection of thirty-five small objects, including small vessels and lids, chert balls, figurines, fragments of alabaster, and chert flakes, was recovered. In this room, at a depth of 7 ft. 8 in., was found a fragment of carved bone, HR 2338, bearing two pictographs.

In the corner of Room 127 a large dish (HR 2286, Pl. I, 33) was discovered *in situ*, and in this were seal HR 2288, and a terra-cotta sealing (Pl. CXVI, 26), while in the adjacent débris were numerous small vessels, many fragments of sawn and partially worked steatite, and a pointed bone object resembling a stylus.

Two very large vessels were also found in Room 128 at a depth of 10 ft. 6 in., one, HR 2281, being excellently preserved (Pls. XLIV, *d* and LXXXIV, 24). A large collection of miscellaneous objects, including miniature vases, beads, fragments of shell bangles, pieces of copper, and the faience end of a necklace was also recovered in this room.

Room 78 yielded a fragmentary seal (HR 1568), while two interesting seals, Nos. 365 and 372, depicting elephants, were found in Room 51 (Pl. CXII), but the most remarkable finds were the remains of fourteen human bodies found in the small room No. 74 (Pl. XLIII, *a*).

Skeleton 2. On 29th December, 1925, 1 foot below the surface, part of a skeleton was discovered above what proved later to be the southern wall of Room 74 of House V, Section B (Pl. XLI, *d*). All below the pelvis, save the head of the right femur, which was still in the acetabulum, was missing and the bones were extremely friable, being much affected by salts. The body lay on the left side, head to the east, arms bent, the left hand to the face, the right a little advanced. A shell bangle still adorned the left wrist (Pl. XLVI, *a* and *b*). Seal 80 (Pl. CVI) was found at the same level and 1 foot distant to the S.E. Later clearance in this room revealed the thirteen other skeletons described below. On further clearance it was discovered that Skeleton 2 was 6 inches above and almost at right angles to the legs of Skeleton 8 (Pl. XLVI, *a*). Of the skull, which was badly broken, Colonel Sewell reports that it clearly belongs to a dolichocephalic race.

Skeleton 4. The next skeleton was found by the northern wall of Room 74 at a depth of 2 feet and lay on the right side, head to the west, face to the south. The right arm was bent, the hand under the head. Owing to its position so close to the surface, and to the action of salt, the bones of the left arm, hip, and most of the lower limbs had disappeared, though a number of the small bones of the hands and feet were recovered, and with these four copper rings. Seventy-five faience beads, seemingly part of a girdle, two copper beads, two copper rings, and a fragment of a copper ornament were also found with these remains.

Skeleton 5. Of Skeleton 5 only the much-damaged skull, ribs, vertebrae, and some bones of the arm were recovered. The body lay face downward N.W. and S.W. and the right lower leg of Skeleton 9 passed over it. Two copper rings were recovered with these remains.

Skeleton 6. Skeleton 6 was found lying on the left side in a natural position, the head towards the S.W., the right hand on the abdomen, the left by the side, the legs slightly flexed (Pl. XLVI, *a*).

Skeleton 7. Skeleton 7 lay on its back with the head towards the south, the face turned to the west, the legs outspread but bent at the knees, bringing the feet together. The right lower leg was over the right forearm of Skeleton 11 and the left knee across the bent right arm of Skeleton 8 (Pl. XLIII, *a*). With these remains were found two copper finger-rings and two copper bracelets.

Skeleton 8. Skeleton 8 (Pl. XLVI, *a*) was found lying prone close to Skeleton 7, with its head approximately to the north, the legs almost straight and slightly apart, the right arm bent with the hand below the forehead, the left arm bent and in advance of the head, and the feet turned in, in an unnatural position.

Skeleton 9. The ninth skeleton was found with the head to the north, the skull being much damaged. The right leg was straight and lying over the body of Skeleton 5, the left bent at the knee (Pl. XLIII, *a*). The arms were outstretched, the right being bent at the elbow, the hand touching the right pelvic bone of Skeleton 8. The head lay close to the elbow of Skeleton 7.

Skeleton 10. Skeleton 10 lay on the north side of the room, with its head to the S.W., the legs straight, the right arm flexed (Pl. XLIII, *a*). The left lower arm and the feet had disappeared. A perfectly preserved shell bangle was found on the left upper arm.

Skeleton 11. Skeleton 11 lay on its back with the head roughly to the south and in line with Skeleton 8, the heads being only 14 inches apart. The arms were at right angles to the body, the forearms bent at right angles, the left forearm being under the lower leg of Skeleton 7, the right between the feet of Skeletons 6 and 13. The right leg was stretched straight out, but the left was bent (Pl. XLIII, *a*).

Skeleton 12. Of the twelfth skeleton only a much-damaged skull, lying face downward, was recovered. This lay in line with and to the south of Skeleton 6 (Pl. XLIII, *a*).

Skeleton 13. Skeleton 13 was lying with the head to the west, the body on the left side, the legs slightly flexed, the left arm touching the head of Skeleton 14. The face was upwards and the skull was in very poor condition (Pl. XLIII, *a*).

Skeleton 14. North of and touching the left arm of Skeleton 13 were found the few remains of the fourteenth skeleton (Pl. XLIII, *a*). These consisted of the skull and part of the vertebral column, most of the other bones having disappeared. From a fragment of right femur it appeared as if the right leg had been extended to the north, the body lying face upward. Three copper bangles were recovered near the scanty remains of the left wrist.

Skeleton 15. A small crushed skull in very poor condition found at the extreme southern end of the room and under the right femur of Skeleton 16 is all that was recovered of the fifteenth body (Pl. XLIII, *a*).

Skeleton 16. Skeleton 16 lay on the back with head to the north, the face half-turned to the left, the

left arm and left leg to the east enclosing the skull of Skeleton 5. Like Skeletons 2, 5, and 9, part of this skeleton was over the southern wall of Room 74, proving that these remains are subsequent to the decay of the building in which they were found (Pl. XLVI, *a*).

The remains of Skeleton 16 were in very poor and friable condition as the result of percolation and the action of salt and the skull was badly crushed.

The remains of the fourteen bodies found in Room 74 appear to indicate some tragedy, for the manner in which the skeletons are intermingled points rather to simultaneous death than synchronous burial, for the positions of the individual bodies are rather those likely to be assumed in the agony of death than those of a number of corpses thrown into a room. Nevertheless, it must be recalled that Skeleton 2 was 6 inches above the legs of Skeleton 8.

The copper rings and bracelets, the faience beads and shell bangles worn by these people in life and found with their remains are undoubted antiquities of the Indus civilization. Nevertheless, the certainty that these fourteen skeletons are of a date subsequent to the decay of the building in which they were recovered assigns them to a period posterior to the abandonment of the latest city.[1] In all probability people of the same race as those who occupied the city in its prime continued for centuries to haunt the site, their poor habitations dotting the mounds which marked its ruins, just as to-day tumble-down huts and flimsy erections of thatch nestle amidst the ruins of many an ancient monument in India, emphasizing by their squalor its present desolation and past magnificence.

Of the skeletal remains found in Area HR only two can with certainty be assumed to be true burials, namely, Nos. 1 and 3, and of these the former has no connection with the Indus civilization and the latter is seemingly of a date subsequent to the abandonment of the courtyard in which it was found.[2] Skeletons 4–16 are all contemporary and none of them burials in the true sense of the word ; and No. 2, although found at a level of 6 inches above these remains, appears to be of similar date and to lie in a haphazard position.

The structures of area HR are built of carefully moulded and well-burnt bricks, the latest structures being markedly less substantial than those of the Early and Intermediate periods. That many of the buildings must have been of considerable height is plain from the thickness of their walls, and the remains of staircases appear to indicate the former existence of second storeys. As no roofing tiles were recovered and no traces of true arches or domes, the roofs may be presumed to have been either of thatch or mud over beams and matting or brushwood.

The breaking of bond (Pl. XLIII, *b*), the carefully cut wedge-shaped bricks of the wells (Pl. XLI, *b*), the true bonding of walls, the rounding of the exterior corner of Room 17 in House VIII, and the well-marked batter of the higher walls, are all evidences of an advanced technique, while the numerous and carefully laid brick and earthenware drains, the fine pavements of the bathroom (Pl. XLV, *a*), the *sandas*, the rubbish-bin and cesspool, as well as the existence of four wells in so small an area, indicate a high standard of comfort and a marked feeling for the conveniences of life such as is rarely found in other civilizations of this age.

[1] This does not seem to me proven. The building in which the skeletons were found belongs to the Intermediate Periods I and II, but all this part of the site appears to have been built over in the Late Periods I, II, and III, and though the later strata are absent at this particular point, that is almost certainly due to denudation, the effects of which are everywhere apparent. It is quite likely, therefore, that the skeletons belong to the interval between the Intermediate I and Late III Periods, though the possibility of their being posterior to the Late Period I may be admitted. See pp. 80–1.—[Ed.]

[2] Cf. p. 181, footnote 1.

CHAPTER XIII

HR AREA—(*Continued*)

SECTION B

THE excavations carried out in 1926–7 in the western portion of HR Area (Pls. XXXIX, XLVII, and XLVIII) covered a tract of ground, 450 feet long by 400 feet wide, including the southern portion of First Street, and revealed a well-planned quarter of the city comprising nine clearly defined blocks of buildings, separated one from another by two streets running north to south and several lanes or alleys more or less at right angles to them. These buildings belong to the Late and Intermediate Periods. As in other parts of this site, those of the Intermediate Period are of better construction and for the most part more spaciously planned than those of the Late Period. The structures of the Late Period were built largely of materials obtained from their predecessors, and many of them, particularly those of the Late I and II Periods, were in the last stage of ruin. The earliest remains excavated in this area were a few walls beneath the Intermediate III stratum in rooms numbered 60 and 46 of House V in Block 2. These will probably be found to belong to Early I Period. The general disposition of streets in this quarter of the city during the Intermediate and Late Periods seems to have remained practically unchanged, though the buildings themselves underwent substantial modification.

First Street (Pl. XLVII)

Length of First Street. The northern part of this street, 145 feet in length, had been dug by Mr. Hargreaves in 1925–6, the rest of the street, some 300 feet in length, was completely exposed by me down to the Intermediate level, the work involving the removal from the street itself of a 10 ft. thick layer of closely packed débris. How far this street runs southward beyond the extremity of the HR Area has not yet been determined. That it extended, however, northwards across the depression which separates this mound from the VS Area and crossed the latter, was definitely established. This street has been completely excavated or traced for a total length of some 850 feet. Future excavations will probably show its extension further north and prove it to be one of the main thoroughfares of this ancient city.

The width of the street averages 30 feet and it is the only street so far excavated at Mohenjo-daro that could have been used for wheeled traffic, if wheeled traffic was permitted inside the town. No actual traces of wheeled vehicles have so far been found at Mohenjo-daro, but that they were used at this period is patent from several terra-cotta wheels of toy carts brought to light at this site as well as from a tiny model bronze cart found at Harappā. **Drains.** The street is not paved with bricks or concrete anywhere. Its level in the Intermediate Period is determined by a well-preserved drain which appears to have issued from the east

front of Room 79 in House V, and has been traced over a length of some 60 feet up to the entrance of Second Lane. Another drain with a slightly different alignment and on a level about 3 feet higher, was picked up further south and followed up to the end of the mound. As time went on, the level of the street was purposely raised, as was also done in other parts of the site, and further up to the north a series of deep brick-lined cesspits were constructed, connected by surface drains, but without any underground arrangement for the escape of sewage (*vide* pp. 16–17 above). Two of these cesspits have so far been exposed, with a brick drain between them to carry off surplus water from the northern to the southern pit, which is provided with a series of projecting brick steps on one side, so that a man could climb down, when necessary, to clear away the solid sediment. Other cesspits appear to be buried, but have not yet been excavated, in the northern section of the street, namely one opposite High Lane and another a little further north near the cross roads. That this and other streets were kept clear of débris, and well looked after by the civic authorities, is evident from the arrangements made for the disposal of sewage, and from the fact that its level was generally lower than that of the side streets communicating with it. **Well.** The well in front of House V in Section A of this area would appear to have been meant for the use of passers-by as well as for the inmates of the buildings, as is often the case in modern Indian towns. The exact purpose of a small brick circle in the middle of the street not far from this well is not apparent ; nor is that of another small brick receptacle in front of House X to the east of the street.

Antiquities found. As might have been expected, not a few minor antiquities were recovered from the débris of this street. They included, besides others, a white steatite seal (HR 3207, Pl. CVII, 126), another seal of the same material (HR 3336, Pl. CIII, 5), with the figure of a unicorn and a pictographic legend, both found 7 feet below the surface, a third seal of yellow steatite showing a geometric pattern (HR 6210, Pl. CXIII, 422) found 6 feet below the surface, a copper tablet (HR 2911), which was found 2 feet below the surface, and a ball of steatite, which was originally inlaid (HR 2861, Pl. CLVIII, 8), found 3 ft. 6 in. below the surface. A much-damaged colossal ring of limestone (HR 2868) was lying 4 feet above the level of the drain between the two cesspits, and a large-sized cone of the same material (HR 2783, Pl. CXXX, 8) was found 2 feet below the surface. It is 15·65 inches high, and in perfect condition. Other noteworthy objects recovered from this street were a terra-cotta tablet (HR 3219 ; depth below surface, 7 feet) with incised dotted lines, possibly a flesh rubber, a well-preserved cult object or gamesman of stone (HR 3443 ; height $\frac{7}{8}$ in.), a conch-shell (HR 3157, Pl. CLVI, 25), with a double carved band and two incised circlets (length 4 inches) found 5 feet below the surface, an eardrop (HR 3254, Pl. CXLIII, 11) consisting of thin disc-shaped beads of copper, a faience bead, and a round copper bead all strung upon a copper wire with a hook at the top, a long nail or drill of copper (length 7·7 inches ; HR 4993, Pl. CXLII, 14) found 4 feet below the surface, and an interesting terra-cotta (HR 6213, Pl. CLIII, 25) showing a woman lying on a bed with a baby at her breast. The cot is so small that the head and legs of the female project over its ends.

Block 1

This group of buildings, which could only be partially explored on account of the hut constructed on this point for the use of a site watchman, is bounded on the east by First Street, and on the south by First Lane. Portions of four private dwelling houses of the Late Period have been distinguished in this block, though it is not impossible that Nos. II and III belong to one and the same house (see plan, Pl. XXXIX).

House I.—Only three rooms and part of a fourth have survived, in a much-ruined condition. One of them (3) is paved with a floor of burnt bricks laid flat upon another course of bricks which are laid on their sides, the whole resting on a layer of black burnt nodules of clay. The adjoining room (2) contains a well (diam. 4 ft. 3 in.) composed of wedge-shaped bricks below, with the top courses of ordinary oblong bricks, presumably belonging to a later repair. The well was excavated to a depth of 9 feet only. There was an entrance to it from First Street, with a small brick platform for washing purposes between the threshold and the well. The house yielded several chert flakes, pottery and ivory objects, including a needle (HR 3483) and a necklace spacer of copper (HR 3499), which was found in Room 3, 3 feet below the surface. **Description of houses.**

House II stands immediately to the south of the one just described and was entered by two doorways from First Lane. One of these led into Room 7, which is the best preserved of the lot, and contains a fine well, 5 ft. 9 in. in diameter; this was excavated down to a depth of 40 feet below the top of the steening, at which depth water was reached. The well is in perfect condition from top to bottom, and many deep grooves in the masonry caused by the friction of ropes testify to its prolonged use before the abandonment of the site. Several small antiquities were found in the well, namely a copper bangle (HR 4999, Pl. CXLIV, 9), a faience bracelet (HR 5361), a lapis lazuli bead (HR 5754), and a fragmentary bracelet of copper (HR 5775). The well is surrounded by a well-preserved paving of bricks, laid flat, and there is a small square channel provided in the S.E. corner of the room to carry off waste water into the lane on the south, whence it was conducted by a brick drain to First Street. The well-chamber (7) originally communicated with Room 6, but the doorway between them was blocked up at a later date.

House III.—The house next door (No. III) is a small structure consisting of only three rooms, though, as stated above, it is not unlikely that they belonged to House II, as the two groups communicated with each other through the paved chamber, 12. The structure has a doorway preceded by a brick platform in First Lane. The party-walls are much ruined and the only noteworthy features are two well-constructed chutes in the thickness of the front wall.

House IV, which dates probably from the Late III Period, was a large building with a frontage of 62 feet, but with the exception of the massive outer wall on the south and west, which is standing to a height of 2 to 5 feet and a few fragments of the walls inside, the whole structure has perished. The outer wall is built upon a 6 in. thick foundation of black burnt nodules of clay.

Block 2

This was the largest of all the nine blocks of buildings excavated in this area, being roughly a rectangle of 248 feet from north to south by some 145 feet from east to west, and occupied a conspicuous position on First Street. As many as 136 rooms have been uncovered in this block and divided tentatively into nine separate buildings, designated V to XIII in the accompanying plan. Several of these buildings appear to date from the Intermediate Period, and considerable portions of Nos. V, IX, and X have been excavated to their original levels. The remaining six structures, as they stand, are of the Late Period, but incorporate many walls of the earlier (Intermediate) period. In this connection it may be observed that there are reasons for thinking that the remains of the Intermediate Period in this block may well have belonged to one large building, which

covered most of the area occupied by this block extending from Second Lane northward as far as Room 37 and from First Street westward to Second Street. Besides the courts and rooms numbered from 37 to 60 and 70 to 84, and described below as forming a separate house (V), it probably embraced various other courts and rooms now partly exposed under Houses IX and X. The spaciousness of its courts and general massiveness of construction suggest that this building could not have been an ordinary private house.

Rooms excavated by Mr. Hargreaves.

House V.—A few rooms of this building had been excavated in the previous season by Mr. Hargreaves. These included Room 74, which yielded a large number of human skeletons, and which appears to have been the vestibule of an entrance from First Street. Of the rest, 70 is a spacious court measuring about 57 by 43 feet wide (Pl. XLIX, *a*). The inner faces of the walls are coarsely built and the west wall is relieved with a row of five walls built at right angles to it and diminishing in size towards the north. At a later date, which could not have been far removed from the original construction of the building,[1] this court was filled in solid with crude bricks in order to raise its ground level, presumably as a precaution against floods. Similar methods were employed in other parts of this building, and in other buildings of this period (cf. pp. 19 and 21 *supra*). The flight of steps in the N.W. corner of Room 75 behind the vestibule was presumably constructed to give access to the raised level of Court 70 and other parts of the building.

Crude brick filling.

The line of four small chambers (81–4) to the south of the Court 70 are evidently of the same age as the court, though the drain running through them must be assigned to a later period of occupation. At the end of Room 82 the drain turns south into House X, and ultimately falls into the drain of Second Lane. A terra-cotta bird (HR 5051, Pl. XCVI, 4) was found in Room 84, 4 feet below the surface.

Earlier strata.

A long narrow corridor, 4 feet wide, and closed at the eastern extremity, runs along the north side of Court 70, and leads into Room 60. The walls of the latter room have been excavated to a depth of some 16 feet, and it was here that the remains of a still earlier stratum, i.e. Intermediate III or Early I, were struck. The adjoining Room 59 was also excavated to the same depth. Both these rooms and corridor were filled in with sun-dried bricks, and, as stated above, there appears to be no doubt that this filling was resorted to when the level of this building was purposely raised to prevent its being flooded.

Rooms 56 and 57, and Room 58, containing a well-paved bath and a well, belong to the Late Period, but several of the walls go down to the Intermediate stratum. Room 57 yielded, 2 feet below the surface, a square white steatite boss seal (HR 4869, Pl. CXIV, 507) engraved with a *svastika*, a copper finger-ring (HR 4058, Pl. CXLIII, 1), a pottery vase (HR 4120), a tiny bowl (HR 4121), and four lids of the same material (HR 4122). The line of well-built chambers along the east front shows many reconstructions, mainly of the Late Period. They communicated with one another by well-defined doorways, some of which were bricked up subsequently.

The large room, 54, to the north of Court 70 and separated from it by the narrow passage referred to above, measures 39 by 25 feet. It was originally open, probably a sort of basement room like those on the west. It communicated with Room 49 by a corbelled entrance, 8 ft. 4 in. high, but only 2 ft. 5 in. wide (Pl. LIV, *b*), and there was another entrance to it on the south side. Both these entrances were bricked up, and the chamber filled with débris and closed in. This débris was cleared away to a depth of some 5 feet, and

[1] The rough inner faces of the walls indicate, as in many other cases, that the court was meant to be filled in immediately.—[Ed.]

revealed a square pier of sun-dried brick with flanking walls on each side, which were standing to a height of some 3 feet. By the side of the pier were lying a number of roughly-fashioned terra-cotta cones and a carrot-shaped object of the same material.

Square beam-holes.

Room 49 (Pl. L, *a*) is a long narrow chamber 44 ft. 4 in. by 10 to 11 feet wide, no corners of which are accurate right angles. Its walls are standing to a height of 16 to 17 feet above the floor level, and the position of the ceiling is clearly marked by a number of square beam-holes which have survived in the north and south walls at the height of 10 ft. 6 in. The beam-holes average 12 inches wide by about 20 inches high by 12 inches deep so that the beams must have been very solid. The main entrance to this room was from Room 50 on the east. The lower chamber was afterwards filled in with débris and a brick paving laid about 18 inches below the beam-holes. A discovery of considerable interest was made on this pavement. It was a collection of eighteen large-sized stone rings (HR 5923–33, 5936–42), which were lying along the north wall. They have all round tops and bottoms and differ in this respect from the large undulating rings found at Harappā. It is noteworthy that, whereas rings of the latter description are common at Harappā, they are only rarely met with at Mohenjo-daro. The rings from Room 49 are 9 to 10 inches high, and carefully smoothed, as if they had been turned on the lathe. As usual, they are all perforated in the middle, the holes being 4½ to 9 inches in diameter and drilled in some cases from both sides. Some of them have shallow holes neatly drilled on either side of the central perforation, while others have in the same positions long rectangular grooves, possibly for metal clamps. A few of them are also drilled with lines of small cup-marks. Not far from these rings were found two round stone caps with rounded tops (HR 5935, Pl. CXXX, 23, and HR 5939, Pl. CXXX, 21), which resemble the tops of the so-called "gamesmen" (probably cult-objects) of varying sizes found both at Harappā and Mohenjo-daro. The precise purpose of these stone rings and "gamesmen" is not yet definitely known. Other objects of the same class are the cones of stone, terra-cotta, etc., but without the projecting rim at the top. One cone of this type (height 11 inches) was unearthed by me at Harappā in 1924–5, and I then drew attention to its similarity to the Śiva-*liṅga* and suggested that it might have been fixed in a pedestal (its base was rough dressed) and worshipped in a tiny brick structure found close by it. It is gratifying to know that Sir John Marshall supports me in identifying them as phallic emblems[1] and the stone rings as their pedestals or *yonis* ; and that this view is further corroborated by the evidence of similar objects discovered by Sir Aurel Stein in the course of his recent archæological expedition in Balūchistān.

Large stone rings.

Phallic emblems.

Limestone capitals.

This room also yielded, at depths varying from 5 ft. 6 in. to 7 feet, two limestone capitals (HR 5934, Pl. CXXX, 22) with spiral volutes resembling Ionic capitals, which must have crowned wooden pillars, as no stone pillars have so far been found at Mohenjo-daro. Another capital of the same design and material was found in Room 50 (in front of Room 49) and a fourth one in the adjoining Room 47. These capitals are all square, measuring some 12 inches along each side and some 6 inches in height, and have round apertures in the middle for the reception of the tenons of the pillars to which they were attached. The bust of a beautiful miniature monkey (HR 6104, height ⅞ in.) of white faience, originally coloured yellow, was lying on the floor of Room 49, a bead of the same material 6 feet below the surface, and a shell spoon (HR 4099) 7 feet below the surface. It was in this room, too, that there was found, 6 feet below the surface, the skull of a young female.

Female skull.

[1] The cones referred to are differentiated by me from the so-called "gamesmen". The former I regard as baetylic, the latter as phallic. See *supra*, pp. 59–61.—[ED.]

The portion of building No. V lying between Room 49 and House VI is much complicated by later walls which have yet to be removed. So much seems certain that in the Intermediate Period it was occupied by two spacious rooms separated from each other by a stoutly built wall running north to south and divided up at a later period into eleven or twelve chambers of different sizes. The southern part of Room 46 was dug down to the level of the floor in Room 49 and revealed a well-constructed brick-paved floor. On it was found a white steatite boss seal (HR 3730, Pl. CIV, 23), with one corner broken off and showing a unicorn with the usual double standard under his head and a line of pictographs at the top. Four feet higher up at the same spot was found a piece of copper-wire chain (HR 3433, Pl. CXLIII, 28) consisting of two triangular links passed through each other. This area also yielded, at the depth of 3 feet below the surface, an interesting boss seal (HR 3005, Pl. CXII, 400) of dark steatite, 1 inch square by ¼ in. thick. It has no animal device, the whole of the surface on the obverse being occupied by a legend of three lines of pictographs. The room to the west of Room 46 yielded a carnelian bead decorated with white **Etched beads.** patterns (HR 3711), such as are occasionally found in Mesopotamia, a small copper chisel (HR 3797, Pl. CXXXVII, 11 ; length 3·85 inches), with a sharp cutting edge, but broken in two halves. From the same room were also recovered, 5 to 6 feet below the surface, a well-preserved and large-sized boss seal of steatite (HR 3791, Pl. CVIII, 168 ; 1·10 by 1·10 feet) exhibiting a unicorn and pictographs, a fragment of a similar seal (HR 3792, Pl. CIX, 239), on which only one pictograph and the head and foreleg of the animal remain, the upper half of a seal of the same kind (HR 5030, Pl. CIV, 32 ; 1·25 by 1·25 by 0·4 in. thick), on which the legs and hind parts of the unicorn are lost, and a fragment of a seal of the same type (HR 4957) bearing traces of red colouring, which was found 3 ft. 6 in. below the surface. Mention may also be made of a steatite bead (HR 3723 Pl. CXLVI, 40–1), which was originally encrusted with inlays of shell or other substance. It was found in the area to the south of Room 43, 5 feet below the surface.

House VI.—This dwelling is situated to the north of House V at the junction of First Street and First Lane, and measures 48 ft. 3 in. by 36 ft. 3 in. Some of the walls appear to be founded on older ones, but the house, as it stands, is of the Late Period. The inner party walls are thin and built in a coarse style on foundations of black terra-cotta nodules. The entrance, which is near the N.E. corner, leads into a rectangular lobby, with a well in one corner and a staircase in the other. The little chamber, 3 feet square, underneath the staircase is provided with a drain and may have been used as a lavatory. Its position near the entrance is convenient, as the scavenger could do his work without disturbing the inmates. The arrangement of the rest of the building is clear. A narrow passage (30), provided with a drain, leads into Room 29, which may have been a bath, and Rooms 26 and 27 on the north side, the public rooms where the owner of the house received his visitors. The southern portion of the house, which was presumably set apart for the residence of the family, contains a courtyard (32), 14 feet square, which was left open to the sky, to provide light and air to the rooms around it. As usual at Mohenjo-daro, the court is not paved. Room 31 to the east of the courtyard was probably the kitchen. It was filled with ashes, though no fireplace or kitchen utensils were found in it. A rounded brick door-socket was found at the S.W. outer corner of this room ; as there is no corresponding socket on the opposite side, the door must have been one of a single leaf. The staircase at the back of the courtyard had the space behind it filled with earth and débris. The existing steps are, as usual, steep with narrow treads and it is not impossible that the upper ones were supported on wooden beams fixed in the walls. Rooms 33 to 36 were probably used as sleeping rooms, stores, etc.

The only object of interest found in this house was a white steatite boss seal (HR 3080, Pl. CXI, 340), which was found in the passage (30), 3 feet below the surface. It is engraved on the obverse with two lines of pictographs and a well-executed Brahmani bull with a big flowing dewlap. As usual with seals of this class, there is no standard or manger under the animal's head.

House VII stands on First Lane and comprises Rooms 17 to 25. There was only one front door, now much ruined, which opened into the courtyard (17). Room 24 contains a well, constructed as usual of wedge-shaped bricks, which was cleared only for a few feet. The other rooms appear to have been considerably remodelled at a later period. An interesting feature of this house is what appears to have been a pottery kiln (Pl. LI, *a*), which came to light in Courtyard 17. It has an oval plan, and is surrounded by a thin wall of a single course of burnt bricks, which is now standing to a height of 3 ft. 6 in. The kiln is 7 feet long along the major axis, and 5 feet wide. It has a narrow mouth, 13 inches wide, at the south end. At the further end is a little wall curved at the top, the exact purpose of which is not clear. There is nothing to show what the roof of the kiln was like, and of what material it was made. The inner surface of the structure was badly burnt and cracked owing to firing, and its bottom was covered with a layer of cinders or slag. For the rest, the structure was filled with brickbats, potsherds, etc., which had fallen into it after it had ceased to be used. Whatever wares were loaded into it for baking had been removed, but I found near the mouth of the furnace two or three half-baked betel-leaf-shaped clay plaques, so that it is not impossible that the kiln was used for baking objects of this kind. Plaques of this shape in terra-cotta and alabaster have been found both at Harappā and Mohenjo-daro, but it is difficult to say what purpose they served. The kiln belongs to the latest "Indus" period represented on the site (Late I), like the kiln found by Mr. Mackay on DK site.

Probable pottery kiln.

Clay and alabaster plaques.

Another kiln of about the same size but circular in shape was recognized by me among the buildings exposed by Mr. Vats in the VS Area in 1925–6, while two other structures[1] of the same nature were exposed in the course of my excavations in the low mound (F) at Harappā.

The only other minor antiquities besides those mentioned above were a copper arrowhead (HR 4532), certain beads (HR 4531) which came to light in Room 19, some pottery jars, and a cubical-shaped weight of stone (HR 4350) weighing 54·5 gm., which was found in the courtyard (17), 1 foot below the surface. Numerous stone weights of this shape but of varying sizes have been found both at Mohenjo-daro and Harappā. None of them, as far as I am aware, bears inscriptions of any kind. They have been submitted to a careful examination by Mr. A. S. Hemmy, whose remarks on them appear in Ch. XXIX.

Stone weights

House VIII.—This is a fairly large dwelling, measuring 54 by 37 feet externally. It comprised about a dozen rooms, but portions of those at the western end have been destroyed. The Courtyard 2, which is in the middle of the north side, was presumably entered through Chambers 3 and 4, and a passage extended from its S.W corner westward to provide access to Rooms 1 and 5. A similar passage (7) from the S.E. corner of the courtyard gave access to Room 8. The doorway by which the entrance chamber, 3 and 4, was entered from First Lane, was bricked up at a later date. At the middle of this chamber is a thin panelled wall, and behind it a staircase which went up to the roof. A second doorway led into Room 9 from Second Street. Rooms 10 and 11 are later additions. None of the rooms are paved.

[1] Vide *Annual Report, Archæological Survey of India*, 1924–5, p. 77.

Room 8, which measures 8 by 7 feet internally, yielded the most important find of the season, which was made immediately beneath the floor. It consists of :—

Find of silver and copper vases containing jewellery and other objects.

1. Two silver vases, one somewhat larger than the other and closed with its lid of the same material. Both the vases were originally wrapped in cotton cloth (Pl. CXI., 2 and 3).

2. A copper vase with a small base, which contained an axe and chisels of copper (Pl. CXLI, 13).

3. Four large, hollow, round ear-rings, or possibly bracelets, of gold, which must originally have been filled with shellac, similar to those noticed in some terra-cotta figurines found at Mohenjo-daro (Pl. CLI, *a*, 2, 3, 9, and 10).

4. Two circular ear-ornaments of gold with beaded border, one pin and a tiny disc which belonged to one of the ear-ornaments (Pl. CXLIX).

5. Three gold forehead fillets or diadems, similar to those found at Mohenjo-daro in previous years. Fillets of the same kind were also found in 1926–7 by Mr. Woolley at Ur in southern Mesopotamia [1] (Pl. CLI, *a*, 6, 7, and 8).

6. Thirteen pieces of similar fillets, rolled up (Pl. CLI, *a*).

7. Two somewhat broader fillets of gold, one of which is complete. Both of them are perforated along the lower edge with a line of holes for carrying beads or other kind of pendants. The complete specimen is shown in Pl. CLI, *a*, 1.

8. Three forehead fillets of a pointed shape All are complete and would appear to have been worn by women. A diadem of this shape is clearly seen on one of the female figurines found in VS Area.

9. Seven hemispheric terminals.

10. One silver bangle broken in two halves (Pl. CLII, 13).

11. Six small finger-rings of silver and one of shell (Pl. CLII, 13).

12. A large collection of beads of gold, silver, faience, semi-precious stones, mounted in some cases in gold caps at both ends, and pendants of different materials, which with the perforated spacers and terminals found with the beads have been made up into nine separate necklaces shown in Pls. CXLIX and CL.

The find also included a fragmentary seal (Pl. CXII, 376) exhibiting a unicorn above, an elephant below it, and three pictographs, as well as a chert scraper.[2]

The ornaments mentioned above throw useful light on the fashions in personal decoration in vogue among the early inhabitants of Mohenjo-daro and on account of their high quality of workmanship are among the most excellent examples of the goldsmith's art as practised in the third millennium B.C.

Cotton textiles.

The scientific value of this discovery is, however, further enhanced by the remnants of the cloth in which the vases were wrapped, for they establish the use of cotton textiles at Mohenjo-daro about 3000 B.C [3]

Room 9 yielded a wheel-shaped object of stone (HR 3937) and Room 10 a spoon of copper (HR 3941 ; length 3·2 inches, width 2·03 inches) with a hole in one side for a handle of wood or other material. The spoon is broken in two pieces.

An area 50 feet from north to south by 70 feet east to west to the south of House VIII has only been superficially excavated. There is much digging still to be done and so far only a few coarsely built structures of no interest have been brought to light here. The smaller

[1] *Antiquaries' Journal*, vol. viii, p. 12 and pl. ix, 3.

[2] For further particulars of this jewellery, see Ch. XXVI.—[Ed.]

[3] See *supra*, p. 33.—[Ed.]

antiquities found in this area included a small pottery jar with lid (HR 5868), a square boss seal (HR 5193, Pl. CX, 306) of steatite showing a buffalo with a manger under his head and a line of pictographs, which was lying 5 feet below the surface. Another object of interest was a hollow silver ear-ornament (HR 4174), with pieces of a silver forehead-diadem adhering to it. The ear-ring had originally been wrapped in a piece of cloth, like the vases (HR 4212, *a*) found in Room 8 of House VIII.

House IX.—This building stands on Street 2 to the west of Rooms 59, 60, and 70 of House V. Some of its walls, which probably belonged to the large House V, extend down to the Intermediate level, and were repaired and raised when the house was rebuilt in the Late Period. The only portions, however, that have been opened up to the earlier floor-level are the row of three rooms (85, 86, and 87), together with the narrow chambers in front, the outer wall on the north, and part of Room 66. Rooms 85, 86, and 87 have broad entrances opening into the rooms in front. Their walls are standing to a height of 13 feet above the floor and the level of the ceiling is clearly determined in each room by a line of three square holes for the reception of roof beams, 10 feet above the floor level. These holes are well preserved in Room 85, but have been bricked up in the other two rooms. Small patches of brick pavements have survived in Rooms 86 and 87. The outer north wall of this building is about 3 feet thick, and composed of three courses of bricks laid lengthwise, the back wall of the three rooms referred to being of two courses, and the party walls only one brick thick. The level of the floor in the next period (Intermediate I or Late III) is indicated by the threshold in the doorway of Room 85, which was found 7 ft. 6 in. above the level of its predecessor. The débris between the two strata consisted of earth mixed with potsherds and other rubbish, and was probably thrown in purposely to raise the level. The small square trough made of bricks, 2 ft. 10 in. along each side and bounded by a single course of brick laid on edge, which has survived on the later floor in Room 85, must be assigned to the Late I or II Period. It may have been a fireplace. A similar structure was found on the floor of Room 21 in House XV in Block 3. The plan of the rooms in the rear part of the house to a large measure remains unintelligible on account of later additions and alterations. It was presumably entered from the south.

Beam-holes.

Fireplace (?).

Shell-inlay and other antiquities.

A mass of shell-inlay (HR 4066, Pl. CLVI, 12; Pl. CLV, 34 and 35) was found 3 ft. 5 in. below the surface in the N.W. corner of Room 85. These pieces exhibit a large variety of geometric and other designs, such as the cross within the cross, the shield, the bow, the horseshoe, etc. Along with these inlays were found many waste pieces of sea-shells, left after the patterns referred to and other objects like bangles, etc., had been fashioned out of them. Other antiquities recovered from this room were a square steatite boss seal (HR 4111, Pl. CVII, 110), showing a unicorn and a pictographic legend, found 3 feet below the surface, a similar seal (HR 5995, Pl. CVIII, 151), found 5 feet below the surface, another similar seal (HR 4054, Pl. CX, 283), with a double grooved boss at the back, found 2 ft. 5 in. below the surface, another well-preserved seal of the same type and material (HR 4110, Pl. CIII, 7), and another similar seal (HR 4112, Pl. CIX, 256), on which only the body of the unicorn survives, found 3 feet below the surface. This room also produced a spear-head of copper (HR 4064; length 3¼ inches, width in the middle 1⅜ inches) with the point of its blade broken off, a large spear-head of copper (HR 4065), found 3 feet and 3 ft. 5 in. below the surface respectively, a copper chisel (HR 4173; length 2 inches, width ⅜ in., thickness $\frac{3}{16}$ in.) found 4 feet below the surface. In Room 87 I found the head of a terra-cotta female figure (HR 6055), 9 feet below the surface, a finger-ring of fine copper-wire (HR 6036, Pl. CXLIII, 5), a chisel of the same material (HR 6036; length 3 inches), and a terra-cotta bird 9 feet below the surface, an arrow-head of copper (HR 5415; length of blade and

tang 3⅛ inches) with blunt edges, 5 feet below the surface, a ring of white steatite (HR 5467, Pl. CLVIII, 10, diameter 1·2 inches) plain on one side with four eye-shaped patterns in relief and a shallow rim round the hole which may have been a pin-head, found 4 feet below the surface, a white steatite seal with the unicorn device (HR 5414, Pl. CIV, 31), 5 feet below the surface, another seal of the same material (HR 5971, Pl. CXI, 346) showing a rhinoceros with a manger under his head, broken in three pieces, another seal of grey steatite (HR 5972, Pl. CXII, 373) showing an elephant whose hind parts are broken off, all three found 8 feet below the surface, and a white steatite seal (HR 6006) with the obverse completely obliterated, which came to light 5 ft. 6 in. below the surface. Other noteworthy objects recovered from this room were a fragmentary painted terra-cotta dog (HR 6024, Pl. XCVI, 20), found 9 feet below the surface, and a terra-cotta female figurine (HR 4986, Pl. XCV, 20), wearing a narrow loin cloth and holding a child against her breast. Her right foot and left leg are missing. The figure was found 8 feet below the surface. Four feet below the surface in the same room was lying a circular ornament of faience (HR 5463, Pl. CLVIII, 12), which was originally encrusted with heart-shaped inlays in the centre and crescent-shaped ones round the margin.

Mention may also be made of a well-polished ivory or bone pin (HR 6041, Pl. CXXXII, 9, length 4·25 inches), found 9 feet below the surface ; and a potsherd (HR 6173) painted with a naturalistic pattern of a duck, which was found 8 feet below the surface. The narrow rooms in front of Rooms 85 and 87 yielded several pottery and other objects including a flat, shallow platter, several half-burnt plaques (HR 6170) similar to those found at the mouth of the pottery kiln in House VIII, 8 feet below the surface, a potsherd painted with a row of geese, and the spout of an alabaster jar (HR 6159), which was lying 4 feet below the surface. The space on the south of the house yielded, 5 feet below the surface, a pottery fragment (HR 6033) which, to judge from complete specimens found by Mr. Mackay, must have belonged to a censer. In Room 62 I found at the depth of 3 feet below the surface a large pottery jar (HR 4290) which contained nothing save earth, two spear-heads of copper (HR 3832, Pl. CXXXVI, 2, length 7·6 inches, and HR 3833, length 5¾ inches), a terra-cotta female figurine (HR 3925) which came to light 4 ft. 2 in. below the surface, and a finger-ring of the same material (HR 4058), 2 feet below the surface. Room 67 yielded two stone slabs (HR 5811), presumably grindstones, which were lying 4 feet below the surface.

The southern portion of Block 2 is occupied by a line of three well-built houses (X, XI. and XII), with high-standing walls and tall entrances opening into Second Lane (Pl. XLIX, *b*), The latter starts from Third Lane on the south, turns east at the N.W. corner of House XVII, whence it ran right on to First Street. It is traversed by a well-built covered drain with a gradient of 5 feet between the point where it leaves the bath (10) in House XVIII and a point near its mouth on the east. Several other house drains discharge themselves into it from both sides of the lane. It may be observed that the seeming cesspit in this lane is not a cesspit but the remains of an earlier structure. All the three buildings (X to XII) are reared on ruins of the Intermediate Period and to judge from the portion of House X which has so far been cleared to that level, the floors of the later structures are 9 to 10 feet higher than their predecessors. In the planning of the houses use was made, as far as possible, of the earlier walls but the interior walls belong, to a large extent, to the Late III Period.

House X.—This house included about a dozen rooms of which four on the south and six on the west are distinguishable. The rooms are of different sizes and remains of three staircases have survived. Room 134 was entered from Second Lane by a doorway which

was subsequently bricked up. In this room there are two large pottery troughs (Pl. LI, *c*) bedded in the floor and secured at the top with a course of bricks round their mouths. They are of equal size, 2 ft. 7 in. in diameter at the top and the same in depth. I am inclined to think that these troughs were used for dyeing clothes. A third vessel of the same size came to light in the floor of the adjoining room (135). The party wall between the two rooms runs over this pot and is, therefore, later. By the side of this pot I found a brick-lined pit filled with gypsum plaster, which may have been used for plastering the walls of these rooms, as patches of it were still adhering to the inner walls of Room 134. Room 135 also yielded a small quantity of oyster shells. It is difficult to say what purpose they served, though it is not impossible that they were pounded and used like mica in modern times to add lustre to the clothes, or, what is equally possible, for making shell plaster.

Troughs for dyeing.

Gypsum for plastering walls.

The room (131) at the S.W. corner of the house yielded, 5 feet below the surface, two elliptical tablets of bright green faience (HR 4860) 2¼ inches and 2 inches long, which would appear to have been mounted in gold and to have served as the central ornaments of necklaces. The minor objects found in Second Lane included a well-preserved round steatite seal (HR 4393, Pl. CX, 309) showing a line of pictographs round the upper margin and a bison below. It was found 4 feet below the surface.

House XI.—This house has a frontage of 33 feet along Second Lane. An entrance, 5 ft. 3 in. wide, gives access to a rectangular room (117) which was provided, near its S.E. corner, with a window 3 feet above the level of the floor. The adjoining chamber (118), which also communicates with Second Lane by a narrow corbelled doorway, 5 ft. 2 in. high by 2 ft. 2 in. wide, contains a staircase which led up to the upper storey. The central room (114) was probably an open courtyard. Behind and on either side of it there are a number of small-sized rooms, some of which have fine-jointed brick-paved floors, and include a little bath provided with a well-built drain to carry off waste water through the courtyard into the lane on the south. An entrance at the back of the house has a threshold of remarkably well-rubbed bricks and gives on to a large open space (109) on the north.

Room 118 yielded a miniature jar of blue faience (HR 5024, Pl. CI, 3) and a square boss seal of white steatite (HR 5028, Pl. CXI, 338) showing a well-executed Brahmani bull with a large flowing dewlap and a line of three pictographs, two in the form of a bird. Both of these objects were lying 5 feet below the surface. Room 117 produced two seals at the depth of 6 feet below the surface. One of them (HR 4945, Pl. CV, 51) was found in the N.W. corner of the room and is in good preservation except for the edges which are somewhat worn. It exhibits the unicorn device and a line of pictographs. The other seal (HR 4952, Pl. CXII, 380) shows a composite human-headed animal of a type now familiar at Mohenjo-daro. Part of the legend is missing. A fourth seal (HR 5085, Pl. CV, 50) with the unicorn device was found in Room 116 at the same depth.

House XII.—This house stands at the junction of Second Street and Second Lane and has an entrance opening on each of them. It consists of a rectangular courtyard (105), 25 ft. 6 in. by 9 ft. 4 in., preceded by a smaller chamber on the west and a row of three rooms on each of the north and south sides. The walls, which do not exceed 10 feet in height, are, as usual, quite plain except for a few niches which occur in some of them, 4 to 5 feet above the floor level. The square holes for roof beams in the north walls of Rooms 101 and 102, occurring at equal intervals of about 3 feet from each other, belong to the earlier building which lies buried under this structure. A small scrap of a brick pavement has survived in Room 107, but there is nothing to show that the other rooms were also similarly paved. On this fragmentary paving was made an interesting find (HR 6186, Pl. CXLIII, 19) consisting

Beam-holes.

Copper buttons and other objects. of a mass of copper buttons similar to those used to this day, necklace spacers and terminals of the same material and one or two beads of gold. The buttons are 0·5 to 0·7 in. in diameter, each pierced with two holes in the middle hollow portion. Another interesting antiquity, which was found 4 feet below the surface in the same room, is a fragment of a bowl-shaped object of faience (HR 4767) with a ribbed border and concentric lozenge-shaped patterns round the body, formerly embellished with inlays of shell or some other substance. It may have been a head ornament which was fastened to the hair by a string, for which a hole exists in the top. The entrance chamber (104) yielded, at the depth of 8 feet below the surface, a large-sized stone ring (HR 6127; height 8¼ inches) similar to those found in Room 49 in House V. Room 105 produced, 6 feet below the surface, two copper rods (HR 4964, Pl. CXLIII, 33; length 2⅝ inches and 3¼ inches), for applying antimony to the

Blow-pipe. eyes and two pieces of a coppersmith's blow-pipe of the same material (HR 4964, Pl. CXLIV, 10; diameter 1 inch). The antiquities found in Room 102 included a fragmentary white steatite boss seal (HR 5772, Pl. CIX, 257) on which the pictographs and the unicorn device are intact. This seal was found 7 feet below the surface. A foot lower down was lying a fragment of a stone cone (HR 6202; height 4¼ inches), which may have been a weight, and by the side of it an incomplete stone pedestal (HR 6202; height 2 inches) with a round socket in the top and a smaller hole in the bottom by which it was probably fixed. A complete specimen of this kind (VS 2648) was found in 1925–6 in

Alabaster rings. the VS Area. At the same spot were also found three conical-shaped and pierced alabaster rings (HR 6200; height 2⅝ inches and HR 4943, Pl. CLVII, 58) with their tops cut in the shape of petals. Other similar objects have been found at Harappā and Mohenjo-daro, but their purpose is uncertain. A boss seal of steatite (HR 4965, Pl. CVII, 114) with a unicorn and pictographs was recovered from Room 106, 6 feet below the surface.

House XIII.—Like the structure just described, this house evidently faced towards Second Street, though no trace of an entrance has survived. The whole of the building has come down in a much ruined condition. Room 92 was presumably left open to the sky and Rooms 90 and 91 are brick-paved baths of the Late Period. A drain runs through Room 91 and communicates with the drain referred to in connection with Houses V and X. Rooms 94, 95, and 97 must have been living rooms or stores. A noteworthy feature of 98, which must have been the main courtyard of the house, is a free standing square brick pillar

Presumable verandah. and a pilaster attached to its west wall, which presumably supported an open verandah. Rooms 93, 96, and 99 were also probably a verandah, which was covered in and partitioned off into three small chambers at a later date.

A terra-cotta bird-shaped whistle (HR 5980, cf. Pl. CLIII, 17 and 18) was found in Room 89, 5 feet below the surface. Room 95 yielded a small grey-blue clay jar, 3 inches high (HR 3131, Pl. LXXVIII, 16 (1)), with narrow mouth and pointed base and adorned with rows of raised pimples or bosses, found 3 feet below the surface, a necklace terminal of the same material (HR 4967), found 6 feet below the surface, a fragmentary shell spoon (HR 4177) found 3 feet below the surface, and two steatite boss seals, one of which (HR 3130, Pl. CXII, 393) is broken and badly worn. The other seal (HR 4161, Pl. CIII, 1), when complete, was 2·10 inches square, but all that now remains of it is the hind portion of a unicorn or bull device and part of a legend of two lines of pictographs. It was lying 3 feet below the surface. The courtyard (98) produced a copper lid (HR 3033) and a star-shaped bead of faience (HR 3098).

Block 3

This group of buildings, which is enclosed by Second Lane on the north and the west, and by First Street on the east, comprises four structures (XIV to XVII).

House XIV.—This house is built on two different levels, the portion on the east front comprising a long narrow verandah several feet lower than the rest. The latter section belongs to the Intermediate (II or III) Period ; the upper to the Late Period. In the latter period the level of First Street was much higher (6 or 7 feet). In the later period the long verandah was divided up by at least one cross wall. The building is surrounded, on the three sides which have so far been completely exposed, by a massive wall 3 ft. 9 in. to 4 feet in thickness and has a length of 66 feet from north to south and a width of some 44 feet. Room 1 yielded some interesting objects consisting of a copper jar which had been badly crushed by the weight of the débris above it, two earthen jars which were filled with earth, sixteen bangles of copper, two stone beads, and a blue steatite seal (HR 3767, Pl. CLII, 4–6, and Pl. CXIII, 462), all of which were lying close together, 6 feet below the surface. Other antiquities found in this room, which like those referred to must be ascribed to the interval between the Late III and Intermediate I Period, included a fragment of a black steatite seal (HR 4125, Pl. CXIII, 433), a piece of a white steatite seal (HR 3841, Pl. CX, 298), found 4 feet and 6 feet below the surface, two chert flakes (HR 3902 ; 9 feet below the surface), a cubical stone weight (HR 3906), a rectangular ivory or shell bar (HR 4009) incised on all sides with concentric circlets, possibly a gaming piece, and a ball of shell (HR 4087, Pl. CLIII, 3) adorned with six circlets. Room 12 yielded a carnelian bead (HR 4001) and a copper bead (HR 4003), 12 feet below the surface. **Copper jar, bangles, and other objects.**

The rooms on the higher level at the back of the house were entered by a doorway (now bricked up) from Second Lane on the north and three others on the west, where an additional area (14) was enclosed in, at a somewhat later date. Rooms 7 and 8 would appear originally to have served as an open courtyard and the others to have been used for residential and other purposes. The two narrow wells built in the thickness of walls in the southern portion, which could not be completely explored, probably date from the Intermediate Period, as no doubt does also the outer thick wall of the structure.

Room 10 yielded, 3 feet below the surface, a plain forehead fillet of gold (HR 4052 ; length 1 ft. 2½ in., width ¼ in.) similar to those found in Room 8 in House VIII, as well as a lapis lazuli bead (HR 4131) and a circular inlay piece of shell (HR 4129), both of which were lying 4 feet below the surface. Three feet below the surface was also found a square boss seal of steatite (HR 4238, Pl. CVII, 106) with the unicorn device and a line of pictographs. The seal is in a good condition except for the lower left corner, which is broken off, carrying away with it the vertical stem of the standard which is such a typical feature of seals of this class. **Gold fillet.**

House XV.—This house is a building of fairly large dimensions, being some 56 feet along each side. As it stands, it is a reconstruction of the Late III Period on foundations of the Intermediate I Period. The walls of the three rooms 17, 18, and 19 are massively built; those of the other rooms on the north, east, and south, are thin and in a coarse style. Room 17 was entered by a doorway in the south wall, which was bricked up at a later date when the staircase in front of it was constructed. The northern section (13) appears to have been an open court. In the Late II Period it was partitioned off into two halves by a thin panelled wall resting upon a thick layer of débris. The western half yielded a square boss

seal of steatite (HR 4368, Pl. CVII, 127) with a unicorn and a line of pictographs, one of which is in the form of a man carrying a *bahangi* or shoulder-pole. The upper right corner of the seal is slightly injured. It was lying 2 ft. 5 in. below the surface. Other antiquities recovered from this room, which were numerous, included a crocodile head in shell (HR 4900 ; length 2¼ inches), two pieces of a copper tablet (HR 4902), a cubical stone weight (HR 4941), a broken piece of shell-inlay exhibiting a star within a circle (HR 5006, Pl. CLV, 50), a black stone bead (HR 5012), which were found 4 to 6 feet below the surface, and pottery jars, beads of faience, etc., and bangles of shell and other materials.

Crocodile head of shell.

The southern portion of the house consists of a small courtyard (21) giving on to three rooms on the south and west and preceded by a vestibule (22) on the east, which was littered with potsherds. In the floor of the courtyard is a small brick trough, presumably a fire-place. A brick door-socket has survived in position in the threshold to the outer doorway of Room 22, but there was no trace of the door frame. A bead of brown glazed pottery with four white bands (HR 5026, Pl. CXLVI, 50) was found in Room 18, 6 feet below the surface.

Brick door-socket, and bead of brown glazed pottery.

House XVI (Pl. LI, *b*).—This is a particularly well-built house, parts of which probably date from the Intermediate Period. It is open on all four sides, the alley at the back being the narrowest in this area. The entrance to the house lies at the end of a short alley which connected Second and Third Lanes, but was subsequently closed at the southern end. The building consists of a fairly large courtyard (25) along the south wall, with ranges of rooms along the other three sides. The small brick-paved room (34) adjoining the entrance chamber contains a well so disposed that it could be used not only by the owner, but also by his neighbours. The adjoining room (33) contains a staircase supported on an L-shaped basement. The narrow-paved chamber (32), occupying a higher level than the courtyard, is a bath, but it is difficult to say whether the flight of steps referred to was meant merely to give access to it. The larger room (36) in the middle of the back row would also appear to have been a bath. It has a raised floor, which is neatly paved with dressed bricks laid flatwise and provided with a covered drain which, after crossing the courtyard, runs through the lane on the east and eventually discharges itself into the drain in Second Lane. Rooms 29 and 30 have doors opening into the courtyard Perhaps there was a narrow passage to the east of Room 30, and 27 was a second courtyard At a later date this courtyard was filled in with sun-dried brick to raise the level of this part of the house.

Later filling of sun-dried brick.

Only a few minor antiquities were found in this structure. They included an unfinished copper chisel (HR 4636 ; length 2 inches, width 7/16 in.), a cubical stone weight (HR 4737), a pottery hen whistle (HR 4739), three pieces of mother-of-pearl (HR 4744), and part of a terra-cotta figurine (HR 4795), which came to light in Room 30, 4 feet below the surface. Five faience beads (HR 4746) were lying 6 feet below the surface in Room 29 and a painted pottery bowl (HR 4794), which had lost its bottom, 3 feet below the surface in Room 37.

House XVII.—Preceded by a spacious courtyard (39) at the north end, this building consists of a narrow chamber (44), 22 feet long by 6 feet wide, with a small entrance chamber (41) in front, a staircase (40) which was supported on two closed chambers (45) on the west, and two rooms (42 and 43), only 7 ft. 3 in. wide, on the east. Access to Room 44 was gained by a side entrance through Room 42, and the tall narrow slit, 5 inches wide, in its north wall was presumably meant to let light into it. These ground-floor rooms would have served very well as godowns, the upper rooms being used for residential purposes. Some earlier walls were noticed under the floor of the central chamber (44).

In the courtyard (39) were found large quantities of charcoal mixed with débris. Here also were a large stone slab (HR 6156), a piece of lattice work in faience (HR 6148, Pl. CLVIII, 14), a *svastika* seal (HR 6147, Pl. CXIV, 506), three carnelian beads (HR 6135

and 6152), a stone weight (HR 6138), two copper beads adhering together (HR 6139), a terra-cotta animal (HR 6140), and a copper tablet (HR 4337, Pl. CXVII, 12) showing a bull (?) with a manger on one face and a pictographic legend on the other.

Block 4

The group of buildings designated as Block 4 in the accompanying plan (Pl. XXXIX) lies between Second and Third Streets and is bounded on the north and south by Fourth and Third Lanes respectively. The four structures XIX to XXII fronting on to Street 3 were probably shops. The fifth building (XVIII) which covers the rest of the area in this block, I take to have been a large and spacious house.

House XVIII.—Next to House V described above, this is the largest structure so far unearthed in the western section of the HR Area. On plan it resembles an inverted letter L. The length along the western end is 128 feet, and the width in the broader portion on the north 88 feet. The house is divided into three distinct sections, viz. a court on the east with rooms on the north and south of it; a more spacious court to the west of it, surrounded by lines of rooms on three sides; and a southern section comprising a number of chambers, which is separated from the western court by a fairly broad passage leading from the S.W. corner of the eastern court. Two flights of steps, one of which is built into the thickness of the wall, led up to the second storey of the house from the passage referred to. The eastern court has three entrances from Second Street. Of the two rooms on the south side, one (9) would appear to have been a guard room; the other (10) is a large bathing chamber with a neat brick-paved floor and a drain which carried off the water into Second Lane and along it into First Street. Attached to the bath at its N.W. corner is a well, from which water could be drawn from within the chamber. Of the four rooms (4 to 7) along the north wall, 5 and 6 had narrow doorways, only 1½ feet in width. As Room 4 has no doorway opening into the court, all three rooms must have had windows or ventilators high up in the walls. The western court (19) communicated with the eastern court (8) by a doorway in the wall between them, which was blocked up at a later date, and with Third Street by a raised causeway preceded by a flight of steps. The western court was subsequently filled in solid with crude mud bricks, evidently to raise its level. The rows of rooms on all sides of this court would appear to have been treated in the same manner. They may originally have been preceded by open verandahs for which there is ample room, but no evidence of their existence was brought to light. The solid brick platform (3), 16 feet square, on the north side of the court was apparently meant to sustain a superstructure. In its outer wall is a vertical drain which empties itself into a high level drain in Fourth Lane. To a still later date belongs the corbelled tunnel, 2 ft. 5 in. wide by 4 feet high, in which the drain is enclosed (Pl. L, *b*). A similar drain of about the same size received the water from another well-constructed chute in the west wall of the southern section of this building. The rooms in this portion are much better preserved and the walls are standing to a considerable height, but some of the doorways have been bricked up.

The excavation of this building brought to light many small antiquities, of which the following may be noticed: two carnelian beads (HR 3624) found in Room 7, 5 ft. 6 in. below the surface; a terra-cotta cone (HR 3628) and a fragmentary female figure (HR 3629) 6 feet below the surface in the same room; a fragmentary steatite seal (HR 5531, Pl. CVII, 139) with the unicorn device, and a faience jar cover (HR 5535),

both of which were found in the open court (8) on the east, 6 feet below the surface ; a cubical stone weight (HR 5536, *b*) found on the brick platform (3) ; a faience bead with copper filling (HR 5652); a tiny thimble-shaped copper object (HR 5650, Pl. CXLIII, 22); and a cubical stone weight (HR 5654)—all of which came from the west court (19)—and a steatite seal (HR 5596, CIX, 206) with the unicorn device, and a faience cone (HR 4395, Pl. CLIII, 31) adorned with geometric patterns, found in the passage (20). The passage also yielded a well-made pottery spoon (HR 5673, Pl. CXXXIII, 12), 6 feet below the surface. A square boss seal (HR 4469, Pl. CXI, 352) of white steatite was also found to the south of the corbelled drain to the south of House XIX, 2 ft. 6 in. below the surface. The seal had the figure of a tiger, but its head and the pictographic legend are broken off. Behind, however, a tree is clearly discernible.

Houses used as dependents' quarters.

Houses XIX to XXII are very small structures at the southern end of Third Street. It is not unlikely that these were dependents' or menials' quarters attached to the great House XVIII. Such quarters would be indispensable for a staff such as the size of the house implies. These structures were entered from a narrow lane running north and south between them and House XVIII.

Comparatively few objects of interest were found in these buildings. In House XIX, Room 32, were lying, 3 feet below the surface, a square white steatite boss seal (HR 4411, Pl. CVI, 92) with well-cut pictographs and unicorn device, and a key-shaped ivory bar (HR 4412), incised with concentric circlets. From Room 35 of the House XX came a well-executed tiny squirrel of blue faience (HR 5987, Pl. XCVI, 7), and a small *linga*-shaped stone (HR 5988). A fragment of a square boss seal of white steatite (HR 5700, Pl. CVII, 124) was recovered from Room 41 of the House XXI. Only the forelegs and shoulders of the unicorn and the usual standard remain.

Linga-shaped stone.

Block 5

This Block contains twenty-five separate structures (Nos. XXIII to XLVII) embracing the whole of the area between Second and Third Streets and to the north of Fourth Lane.

House XXIII (Pl. LI, *d*) is a complete and well-built dwelling house of the Intermediate Period, which was repaired on its original foundations in the Late Period and added to or modified. On plan, it is an oblong, 62 feet in length by about 50 feet in width, and consists of a central rectangular court surrounded by thirteen rooms disposed around it. A few of the rooms on the north and east sides were cleared to the earlier level, which lies some 5 feet below the later. Room 6 probably did duty as the entrance chamber, but its east wall is ruined and no trace of the threshold or jambs has survived. The well in the southern portion of this room is constructed with well-dressed bricks and provided with a covered drain to carry off waste water. On leaving the house, this drain emptied itself into a larger drain on the west. The staircase built against the entrance of Room 8 is an addition of the Late Period. The purpose of the low brick platforms with steps, which came to light in the angles of five of the rooms, is not apparent.[1] The four brick piers in the middle of the court were intended to support a verandah. They spring from below the level of the court in the Intermediate I Period, and the pavement of that period is quite clear.

Brick platforms.

[1] I suggest that these carried staircases ascending to the upper floor. Many such staircases are found in a group of bathrooms recently excavated by Mr. Mackay in SD Area.—[Ed.]

Four seals were found in this building. One of them came from Room 1, 2 feet below the surface. It is an incomplete square boss seal (HR 4356, Pl. CV, 42) of white steatite with the unicorn device. A second seal was lying in Room 3, 2 feet below the surface. It is a square boss seal of white steatite (HR 4318, Pl. CX, 322) showing a line of pictographs and an artistically executed short-horned bull eating from a broad trough. Room 10 yielded, 4 ft. 3 in. below the surface, a fragment from the upper left corner of a seal of the same type and the same material (HR 5946, Pl. CXII, 379), on which only three pictographs survive, and the central court a well-preserved seal (HR 4385, Pl. CVI, 97) of black or burnt steatite with the unicorn device. A long, narrow spearhead of copper (HR 5659 ; length $8\frac{1}{16}$ inches, greatest width 2 inches), which was broken in several pieces, was also recovered from Room 10, 2 feet below the surface. In Second Street in front of this house were found, 1 ft. 6 in. below the surface, a seal (HR 4438, Pl. CXI, 343) of the same type as HR 4385, Pl. CVI, 97, but engraved with a figure of the rhinoceros and pictographs now somewhat corroded, a small seal (HR 5796, Pl. CXIII, 419) bearing on its oblong face a line of well-defined pictographs but no animal device, a needle of copper (HR 5801), $4\frac{1}{16}$ inches long, which had a fine point, now broken off, and a well-preserved spearhead of the same material (HR 5799, Pl. CXXXVI, 3 ; Pl. CXXXV, 1). Fourth Lane to the south of House XXIII yielded a boss seal (HR 4409, Pl. CX, 266) with the unicorn device.

House XXIV is interesting as its foundations are laid on the débris of the older structures. While House XXIII goes back to Intermediate I Period, House XXIV belongs almost in its entirety to Late II. It is quite well built, though of old bricks, and is later probably than all the structures fronting on to Third Street. Room 16 contains a well, provided with a covered drain which falls into the vaulted drain in Fourth Lane. The building did not yield any objects of interest.

Houses XXV to XXVIII were feeble structures of the Late II Period. Of these Nos. XXV and XXVII were entered from Second Street, where brick platforms to give access to them have survived, while Nos. XXVI and XXVIII were served by Sixth Lane, which is some 6 feet wide and furnished with a brick-lined cesspit to receive the water from these buildings. In Room 31 of House XXVII, I found, 3 feet below the surface, a small stone macehead (HR 4078, Pl. CXXXIV, 30 ; diameter 3·75 inches) and a polished ivory bar (HR 5880) incised with two concentric circlets on one face and two parallel lines on the other. Room 23 of House XXV yielded a square boss seal of white steatite (HR 4291, Pl. CVIII, 162) with the unicorn device, a miniature pottery vase (HR 4301), a bangle of the same material (HR 4302) and a fragmentary spoon (HR 4304). From Room 26 of House XXVI was recovered a fine figure of a seated terra-cotta monkey (HR 4415, Pl. XCVI, 11), of which the feet are broken off, and from Room 34 of House XXVIII, 3 feet below the surface, two square boss seals of steatite (HR 4400 and 4519, Pl. CVIII, 188) with the unicorn device, and a third and completely obliterated seal (HR 4417), 4 feet below the surface.

Stone macehead.

House XXIX is a fairly large building with several fair-sized rooms fronting on to Second Street. The main walls are thick, the party walls being only one or two courses in width. The structure, as it stands, dates from the Late II Period but is built, in part at any rate, on earlier walls of the Intermediate Period with old material. Various traces of these reconstructions can be seen. Two or three of the older doorways, which had been bricked up to support the later foundations, have now been opened out. Of the minor antiquities found in this building may be noticed a square boss seal of white steatite (HR 4387, Pl. CX, 323) with a short-horned bull standing at a trough, which came to light in Room 37, 2 feet below the surface. Another seal (HR 4399, Pl. CXV, 551) of the

same material was found in the same room, 3 feet below the surface. It is a mere fragment, on which some four pictographs of the legend and the hind parts of the unicorn remain. From this room also came a terra-cotta dog with its tongue hanging out (HR 5336, Pl. XCVI, 16; depth 5 feet below the surface) and a copper toe-ring (HR 4429; depth 3 feet), and from Room 44 a copper arrowhead (HR 5436), which was lying 7 feet below the surface.

Building XXX (Pl. LII, *a*), which is a solidly built structure of the Intermediate Period, was entered from a narrow alley, barely 4 feet wide, on the west, and measures 79 feet in length by 36 to 39 feet in width. It comprises nine compartments (50 to 58) without doorways, the largest of them (55) measuring 23 feet by 18 ft. 6 in. to 19 ft. 6 in. The walls, which are standing to a height of 8 to 10 feet, are clearly foundation walls (see p. 22 above) which in the Intermediate Period were frequently made of great depth. This is borne out by the fact that these compartments were filled in solid with sun-dried brick or pure clay. That the building, which stood on such massive foundations, had an exceptional character—probably sacred—can hardly be doubted. The super-structure, which was a high one, has perished and such few traces as are visible at the north end are of a later date. The well at the opposite end stands in a small covered chamber with squared reveals in the corners (Pl. LII, *b*). The massive outer wall which encloses the original structure on the north, east, and west, rises from about the same level and must be coeval with the rest of the building. The purpose of this outer wall is uncertain; perhaps it was added to support a lofty super-structure.[1] Of the minor antiquities found in this house only two or three deserve notice. A copper chisel (HR 4374) was lying in Room 50, 4 feet below the surface, and a terra-cotta cone (HR 5765) 7 feet below the surface; a terra-cotta figure of a dog (HR 4351) and a fragment of a female figure (HR 4354) were found 4 feet below the surface in Room 58.

Building of unusual character.

The area immediately to the north of the house just described was occupied by a late structure, in which only one or two rooms can be recognized. In one of them (48) was discovered, 3 feet below the surface, a fragmentary square boss seal of white steatite (HR 4348, Pl. CXI, 329) exhibiting a figure of a Brahmani bull and two lines of pictographs above it. The legs of the animal and the boss at the back are broken off. Another seal (HR 4560, Pl. CVI, 102) of the same material but with a figure of a unicorn and the usual standard was found immediately below the surface in the same area but some distance farther north.

House XXXI.—The plan of this structure, which adjoins Building XXX on the south side, is much confused by additions and alterations of the Late Period, so that even the position of its entrance cannot be determined. A blue faience terminal of a necklace (HR 4451) was discovered, 3 feet below the surface in Room 62, which also yielded a square boss seal of dark steatite (HR 5949, Pl. CX, 319) 10 feet below the surface. The obverse is engraved with the figure of a short-horned bull at a trough and a line of pictographs. A terra-cotta animal, which has lost its head and the legs (HR 4950), was also recovered from the same spot. A fragment of a seal (HR 4355, Pl. CXII, 374), on which only a few pictographs have survived, came to light in Room 64, 2 ft. 5 in. below the surface.

Houses XXXII to XLVII.—These sixteen buildings, which occupy the western portion of Block 5 and constitute a double row facing respectively towards Third Street and the narrow Lane 7, did duty either as shops or (which is perhaps more likely) as quarters for retainers attached to the building XXX. They are built in a uniform style and the majority of them consist of a single room in front with one or two smaller ones at the back; a few of the others have also at one end a narrow passage, which may have been left open to the sky, or an additional room or two. Several of these structures contain, in one corner, small

Retainers' quarters or shops.

[1] See *supra*, p. 17, "Roofs."

brick-paved bathing floors with escape holes for the waste water and brick-lined pits or large jars in the street outside, which were doubtless cleared by scavengers. As in modern Indian bazars, the front rooms in the shops, assuming that they were such, would be used for the exposure of commodities for sale and the back rooms for the preparation and storage of surplus stores.

Public drinking place.

The southern room (103) of No. XLIII would appear to have been a *piau* or public drinking place, similar to those so common in modern bazars. One corner of the room is occupied by a finely built well with a neat brick paving laid over the rest of the floor. The shallow round pits in the floor near the well were meant to hold pottery jars which were kept filled with water, and by them sat the attendant to dole out draughts to thirsty persons. The floor was littered with broken pottery goblets with pointed bases. Similar goblets and other jars were also found in the brick-lined pit in front of the room into which the waste water flowed out.

These structures yielded a large number of minor antiquities. From No. XXXII came a long narrow spearhead (HR 5659 ; length $8\frac{1}{16}$ inches, width 2 inches) which was broken in five pieces and was lying in Room 71, 2 feet below the surface, and a similar object, also broken in four pieces (HR 4401) from No. XXXIII, 3 feet below the surface. Room 81 in House XXXVI revealed a yellow Jaisalmer stone handle of a chisel or knife (HR 5655, Pl. CXXXII, 16), in which pieces of the copper tang of the tool still remain, and No. XXXVII (Room 83), a fragment of a square white steatite seal (HR 5676, Pl. CXII, 396) bearing three lines of pictographs but no animal device. In Room 88 in structure No. XXXVIII was found, 4 feet below the surface, a square boss seal of white steatite (HR 5611, Pl. CXII, 370) depicting an elephant and a line of pictographs, but no manger, as well as a terra-cotta female figure (HR 5205) with an ornament in the right ear, and in Room 89 in the same structure, 6 feet below the surface, eleven star-shaped beads of faience (HR 4482). Structure No. XXXIX revealed several objects, one of which, a tablet of copper (HR 4573, Pl. CXVII, 14) engraved with a figure of a bull, was found 3 feet below the surface, and a seal (HR 5635, Pl. CXI, 345) of grey steatite exhibiting a rhinoceros with dotted shoulder and hips, 4 feet below the surface. **Seal showing rhinoceros.** There is the usual manger, but the upper left corner of the seal is damaged. Among the remaining seals recovered from this house is a fragment (HR 4568, Pl. CIII, 17) of a large-sized specimen of white steatite, the rest of which (HR 5195) was found at a distance of some 60 feet at the eastern end of Ninth Lane. Thus restored, the seal is 2¼ inches square, and the unicorn and the line of pictographs engraved on it are quite complete. Another object of interest found in this structure is a fine little squirrel (HR 4534) of blue faience like the one noticed above. **Squirrel of faience.** The area to the east of No. XXXIX revealed, at a depth of 4 feet, a small shallow copper dish (HR 5627, Pl. CXLI, 7), diameter 2 inches, pierced with two holes in the rim, which would appear to have been the pan of a goldsmith's weighing scale,[1] **Goldsmith's weighing scale (?).** a mussel-shell shaped spoon of the same metal (HR 5627) pierced with a hole for a handle, and two flint cores or nuclei (HR 5666). Two black stone polishers of the type found in previous excavations were discovered in Room 96 of No. XLI, 4 feet below the surface, and an unusually large seal of steatite (HR 5804, Pl. CIII, 18), 2·7 inches square, in House XLII, 2 feet below the surface. The obverse depicts a unicorn and pictographs and, what is rarely met with, there is a pictograph also on the boss at the back. **Seal with pictograph on boss at back.** Another seal (HR 5630, Pl. CVIII, 161) of the same kind was secured from Room 101 in the same structure. Yet another fragment of a seal of the same type (HR 5251, Pl. CX, 258) was found in Room 106 in No. XLIV. Room 112 of No. XLVI yielded a faience imitation of a shell (HR 5202), 6 feet below the surface, and Room 114 of No. XLVII a tubular bead of gold (HR 5647).

[1] Mr. Mackay takes this to be a kind of spoon. Many such have since been found at Mohenjo-daro.—[Ed.]

Block 6

House XLVIII.—The solidly built isolated structure XLVIII across Third Street, which occupies the N.W. corner of the Area being described, was hidden under a thick layer of débris suggesting the existence in it of an important building. This expectation was, indeed, fulfilled, but unfortunately its northern portion has been destroyed by rain and other causes and there was no time to excavate its western portion. What has actually been exposed is a spacious courtyard with two or three rooms on the south side, one of which (1) contains a well surrounded by a brick-paved floor, while another (3) has three recesses of different sizes in its south wall. The wall around the central courtyard, which has survived on three sides, is 3 ft. 6 in. thick. The outer wall of the building is 4 feet thick and has been exposed over a length of some 90 feet on the south side. The main entrance was undoubtedly set in the now broken portion of the east wall, and the opening in the west wall of the inner court presumably led into the unexplored portion of the building on the west.

The only objects worth recording found in this building were : (1) A fragment from the top of a square boss seal of steatite (HR 4585, Pl. CIX, 211) showing the unicorn device and another square seal (HR 6207, Pl. CXIV, 520) showing a curious geometric device, both of which were lying in the central court, 2 feet below the surface ; (2) a seal of the same type and material (HR 6206) but with a short-horned bull at a trough, found in the same court, 4 feet below the surface ; (3) a fragment from the right side of a seal of the same type and material (HR 5261, Pl. CIX, 203) on which the head and forelegs of the unicorn, the standard, and part of the pictographic legend are missing ; (4) a seal of yellow faience showing a *svastika;* and (5) a long carnelian bead (HR 4605). A cubical stone weight (HR 4579) was found in Room 1, and a similar object (HR 4580) in the eastern portion of the building, 4 and 3 feet below the surface respectively. Mention may also be made here of a few noteworthy antiquities that came to light immediately to the east of this building. They are : (1) A well-preserved square boss seal of white steatite (HR 5311, Pl. CVIII, 167), 4 feet below the surface, showing two pictographs above and a unicorn standing facing in the direction opposite to that in which it usually appears on other seals. In this example, moreover, the place of the double standard is taken by what appears to be a plant in a vase or a pictograph. (2) The bust of a terra-cotta female figurine (HR 5312, Pl. XCIV, 2) with the hair coiled in a broad knot on the crown. (3) A square boss seal of steatite (HR 5225, Pl. CX, 305 ; depth 3 feet) depicting a buffalo and a pictographic legend.

Block 7

A considerable area to the south of House XLVIII was devoid of any structures except portions of two or three small-sized rooms, apparently of the Late Period, which adjoin the house referred to, and a thin carelessly built wall along Third Street. In one of the small rooms referred to was lying, 2 feet below the surface, a collection of pottery vessels (HR 4597–4600), including several large broken jars (e.g., HR 4598, Pl. LXXXIV, 21), lids, and beakers. They contained nothing except earth and other rubbish. At the same spot, but 1 to 2 feet lower down, were discovered a fragmentary square boss seal (HR 4629, Pl. CX, 293) of steatite, on which one or two pictographs, the horn of the unicorn and part of the standard survive on the obverse, and a pictographic sign on each of the two edges ; some beads and a faience terminal of a necklace (HR 4604, Pl. CXLVII, 22) and two chert flakes (HR 4606). Some painted potsherds (HR 5859 and 5861) and a well-moulded terra-cotta figure of a bull

(HR 5349) were found near the thin wall, 3 and 4 feet below the surface. The rest of the space in this block, which is bounded on the east by Third Street and on the south by Ninth Lane is occupied by seven separate structures (XLIX to LV).

House XLIX[1] is a very interesting structure of the Late II or III Period, though it has come down in a very imperfect condition. Room I contains a well, surrounded by a brick pavement, which is some 2 feet higher than the floor level in the adjoining Room 2. The latter room has two well-built privies constructed against its south wall, the small square paved floors in front of which were used for ablutions. They were drained by outlets in the wall at the back, which connect with a well-built drain in Eighth Lane. **Two privies.**



FIG. 10.—View of privies, with ablution places in front, in building 49.

Rooms 3 to 6, the last of which contains a well, do not call for any remarks. They may or may not have formed part of the house just noticed.

A fragment of a seal (HR 5788, Pl. CX, 299), a well-preserved seal (HR 5572, Pl. CXIV, 502) with the *svastika* symbol, a chert flake (HR 4972) and two miniature pottery vases (HR 4973) were found in Room 2, 3 to 4 feet below the surface. Two other antiquities found in this structure were a well-modelled though fragmentary terra-cotta bull (HR 2894) and a perforated pottery jar or strainer (HR 5850).

Eighth Lane, to the south of House XLIX, is a narrow meandering alley which issues from Third Street, opposite House XLV, runs round the east and south sides of House XLIX, then runs southward to the west of buildings Nos. L and LV, until it links on to the west

[1] It seems likely that the remains comprised in XLIX were an integral part of the great house or Palace XLVIII, which was evidently an edifice of importance, though little of it has yet been excavated.—[ED.]

extremity of Ninth Lane. It has a well-constructed covered drain in its northern section but only traces of it elsewhere. At a subsequent date the level of this lane was raised by some 2 feet, and a new drain constructed on it. The western section of this lane revealed a curious object of shell (HR 5920), the purpose of which is uncertain. It has the shape of a bow (chord 3¾ inches) and had originally five minute holes drilled in one side. Four of these holes now remain and there are two others cut in the top. An analogous antiquity, but with the holes running through it was found at Harappā. At the same spot and at the same depth, i.e. 4 feet below the surface, I found a copper lance-head (HR 5459) which has lost the tang and part of the blade, and a well-preserved square boss seal of white steatite (HR 5992, Pl. CXI, 342) depicting a well-executed rhinoceros, with a trough under his head, in the lower field and a line of pictographs above.

Building L.—Like building No. XXX described above, No. L appears to have been the basement or plinth of a building of the Intermediate Period which has completely disappeared. The existing fabric consists of four cells, the two (8 and 9) at the back larger than those (10) in front, which are not more than 2 feet in width. All the four cells are filled in with sun-baked bricks laid in regular courses and have, naturally, no doorways. Along the south side of the structure runs a narrow passage, while an equally narrow chamber (11 and 12), which was originally fitted with two doorways, stretches from the north end of the structure towards the east, thus showing that at least a part of the space now occupied by House LI may originally have belonged to No. L.

A cubical stone weight (HR 5854), a piece of a copper chisel (HR 5856), and two rings of copper and shell (HR 5858) were found in Room 12, 6 feet below the surface. Room 11 yielded a stone door socket (HR 4617) and close to it a large-sized conical stone weight (HR 4618, Pl. CXXX, 25) with a hole running through the top to facilitate handling. Both of them were lying 4 ft. 5 in. below the surface. A chert knife (HR 4619) was also found at the same spot.

Vertical chute in wall.

House LI.—I have tentatively designated the complex of Rooms 13 to 26 as House LI. It is, however, not impossible that the northern portion, consisting of Rooms 13 to 16, was a separate house. It has a separate doorway, preceded by a broad brick step, opening from Third Street into Room 16 and a separate courtyard (14), from the S.W. corner of which a flight of steps led up to the upper storey. Another noteworthy feature is a vertical chute built in the thickness of the front wall close to the entrance, which falls into a brick-lined cesspit outside the house.

The southern section, comprising Rooms 17 to 26, was entered by a doorway at the southern end of the front wall, but it also communicates with the rooms on the north, thus suggesting that both sections may originally have formed only one house. The southern portion had a more spacious courtyard (18) to provide light and air to the rooms grouped around it, three of which (24 to 26) had their entrances blocked up at a later period, when the western portion of the courtyard was converted into a separate room (17).

Figure of male seated in Indian fashion.

The small antiquities found in this building included beads of faience, carnelian, etc. (HR 4803, Pl. CXLVII, 13 and 16), a stone weight (HR 4805) found in Room 20, 4 feet below the surface; pieces of shell bangles (HR 5863); a terra-cotta figure of a dog (HR 5865), a terra-cotta figure of a male seated in Indian style with hands joined on the knees (HR 5866, Pl. XCV, 19), at the same depth in Room 17, and other objects of copper, etc.

Attention may be drawn here to a low curved wall across Third Street between this House and No. XLI, which was presumably built to stop the street at a later date.

Shop LII.—This is a small structure consisting of a larger oblong room (28) with a smaller one (27) opening out of it on the right. The entrance is set near the southern end

of the front or east wall and the jambs, like the rest of the walls, remain standing to a considerable height. A terra-cotta figurine of a bull (HR 5352) was found in Room 28, 7 feet below the surface.

House LIII.—Buildings LIII to LV form a continuous row of three dwelling houses along Ninth Lane. A staircase is built across this lane near the western corner of House LIV. There is, however, no doubt that originally the lane ran on to the last house in the line and that the staircase is a later addition. House LIII may have belonged to the owner of the adjoining shop (LII), though there is no direct communication between them. The plan of this house is a simple one. The vestibule (29) leads into an open court (30), behind which is the only room (31) which could be called a living room or bedchamber. In one corner of the portico is a staircase, the tiny chamber under which may have done duty as a privy. An outlet through the base of the wall carried off waste water into a small brick-lined cesspit outside the house, from which it flowed into the covered drain of the lane. In the central courtyard (30), a copper spear-head (HR 5514) and an ivory rod (HR 5515, Pl. CXIV, 529; length 2·7 inches) engraved with a line of pictographs, were lying 4 feet below the surface.

House LIV.—The house next door (LIV) is a comfortable little dwelling, with an open court (32) along the back or north wall and some seven rooms disposed on its south and west sides. Of these, Room 37, which was entered from the lane by a fairly broad doorway with a brick-built step to give access to its threshold, is the lobby. The west portion of this chamber is occupied by a bath paved with well-rubbed bricks, with the usual outlet for waste water and a large jar sunk in the floor of the lane within a brick-lined pit. Close to this pit is another, into which fell a well-built vertical chute from the roof of the house. The rooms in the interior of the building have each their own doorways opening direct into the courtyard, except Room 35 which was entered through Room 36 and in its turn gave access to the little chamber (34) beneath the staircase. This latter room may have been used as a store. The staircase has, as usual, very steep steps. The room (33) adjoining the staircase yielded two grindstones and may have been the kitchen.

Vertical chute and drainage pit.

Among the objects found in this building were a terra-cotta bird (HR 5521), a similar figure with a stand (HR 5524) and a square boss seal of white steatite (HR 4986, Pl. CVII, 138) which has lost part of the pictographic legend, the head of the unicorn and the standard. They were all recovered from Room 33, the two former at a depth of 4 feet and the third 2 ft. 8 in. below the surface. At the same spot and the same depth were also lying a small shell weight (HR 4987), a chert knife (HR 4988), and a terra-cotta figure of a female (HR 4991).

House LV has come down in a much ruined condition, so much so that the very foundations of some of the walls have disappeared, while of others only the lowest courses remain standing. Like its three neighbours described above, this structure must also have been entered from Ninth Lane, though there might have been another doorway opening into the lane on the west. The thick wall stretching across Room 39, with a thick layer of débris beneath it, belongs to a later rebuilding. Room 40, with a well-preserved brick pavement, may have been a bath. This pavement consists of a single layer of kiln-burnt bricks laid flat upon a substratum of alternating rows of burnt and sun-dried bricks. This method of construction has not been noticed elsewhere in this quarter of the city. At one end of this paving is a little fireplace, by the side of which was lying one of the most interesting antiquities unearthed during the season. It is a bronze statuette of a naked, slender-limbed dancing-girl (HR 5721, Pl. XCIV, 6–8) cast in the round. It is 4·25 inches high and in good preservation save for the feet, which are broken off. The figure is characterized by negroid facial features, and executed with some primitive vigour. The hair is gathered in

Alternating rows of burnt and sun-dried bricks.

Bronze statuette of dancing-girl.

a heavy coil over the right shoulder, the left leg is bent forward and the right hand placed on the right hip. The left arm, which hangs down, is covered with bangles from the shoulder to the wrist—a fashion that accounts for the large numbers of such ornaments in all conceivable materials, copper, shell, faience, terra-cotta, etc., which are found both at Harappā and Mohenjo-daro. The right arm is adorned with only two bangles above the elbow and with another round the wrist.

From the same room was also obtained, 6 ft. 4 in. below the surface, a copper spoon (?), 3·3 inches long, with a tubular handle much bent by the weight of débris (HR 5725, Pl. CXLI, 8), while in another part of the structure was lying, 4 feet below the surface, a well-executed copper statuette of an elephant (HR 4363, Pl. CXLIV, 4) cast in the round.[1] It has lost all four feet. Its length is 1½ inches and height ⅞ in.

Copper statuette of elephant (?)

In Room 43 or close to it three interesting square boss seals of white or black steatite were discovered. One of them (HR 4364, Pl. CX, 318) shows a figure of a short-horned bull. The pictographic legend has been cut away at the top. The next seal (HR 5629, Pl. CV, 52) has the unicorn device. The legend consists of two lines of pictographs, of which the second or lower line contains only one sign, namely, the double-key shaped symbol which is so frequently found at the beginning or end of these legends. The remaining space in the second line is left blank, thus showing that the symbol in this line is the final sign of the legend. In the impression, this sign naturally occurs at the left end of the line. It is thus obvious that the direction of this system of writing was from left to right, unless it is to be supposed that the script was boustrophedon, that is, written alternately from left to right and from right to left.[2] The third seal (HR 5516, Pl. CIX, 237) is of the same type and has also two lines of pictographs. It was found 2 feet below the surface.

Script on seal from right to left and vice versa.

Block 8

This block of buildings is bounded on the north by Ninth Lane, on the east by Third Street (Pl. LII, *c*), and on the south by Tenth Lane, and comprises nine separate structures (Nos. LVI to LXIV). Of these Nos. LXI, LXII, and LXIII as well as the S.E. portion of No. LVI, all of which open into Third Street, must have been shops, and the rest private dwelling houses.

House LVI is nearly a square, measuring 37 by 33 feet. The portion which was used as a shop is represented by Rooms 6, 7, and 8. It was entered by a doorway with the usual brick step from Third Street, and probably also communicated with the residential apartments by another doorway in the north wall of Room 6. There is a ruined staircase in the southern portion of Room 8. This room yielded, besides other objects, a square boss seal of white steatite (HR 4873, Pl. CVIII, 184 ; depth below the surface 5 feet) on which only the body of the unicorn remains, a fragment of a copper nail, and a rectangular tablet of copper bearing pictographs (HR 6058 ; depth 6 feet) and a bead of copper and another of faience strung on a piece of copper wire (HR 6057). A chert knife and terra-cotta cones, etc. (HR 5404) were found in Room 6, 5 feet below the surface.

[1] It seems more likely that the animal represented is a bear.—[Ed.]

[2] See, however, p. 40 and Chapters XXII and XXIII, where it is conclusively shown that the writing is normally from right to left, though occasionally boustrophedon.—[Ed.]

The plan of the residential portion of this building shows a close resemblance to that of House LIV, and consists of a court (2) with living rooms on three sides of it. Room 1 in the N.E. corner, with a brick-paved floor, was a bath. The structure had two doorways in the east face, one of which is now bricked up, and a third facing Ninth Lane.

From Room 3 at the N.W. corner were recovered, at a depth of 3 feet, a large-sized boss seal of white steatite (HR 4601, Pl. CIII, 10) 2·1 inches square and 0·57 inches thick, engraved with a line of pictographs and a figure of the unicorn standing facing in the usual direction, a copper tablet (HR 4615), and carnelian, faience and terra-cotta beads (HR 4614 ; 2 ft. 6 in. below the surface). The only antiquities found in the courtyard (2) were a stone weight and a curious object of pottery (HR 4809, Pl. CLV, 10), found 5 feet below the surface ; those from Room 9 consisted of faience, terra-cotta, and shell beads, etc. (HR 4810–11).

House LVII.—This structure stands to the west of the one just described and separated from it by a narrow alley which takes off from Ninth Lane in front of the entrance to House LIV and may originally have joined on to the alley running to the east of Houses LVIII and LIX. The southern portion of this building (Room 13) has completely perished: the rest is in a fairly good condition and boasts of two windows, one in each of the north and east walls. A well-preserved square boss seal of white steatite (HR 4868, Pl. CIV, 29) was discovered in Room 10, 5 feet below the surface. It contains a line of pictographs and the unicorn device with the usual standard under the animal's head. Two other seals (HR 4872, Pl. CIX, 226, and HR 5310, Pl. CIX, 245) of the same material and type and with the same device, were recovered from Room 13, 3½ to 5½ feet below the surface, also a fragment of a terra-cotta female figure (HR 5541) and a terra-cotta wheel (HR 5542), 3 feet below the surface. A painted potsherd and a ribbed faience fragment (HR 5540) were found at the same depth in Room 11.

Rooms with separate baths.

House LVIII.—This is a very small dwelling with a frontage of 22 feet, in which four rooms have so far been brought to light. The front rooms (16 and 18) have internal dimensions of only 6 by 11 feet and 6 by 9 feet. Even so, each of them has a separate bath of well-rubbed bricks with outlets and brick-lined cesspits in the narrow lane to the east. The cesspits are connected with a well-built drain which was followed up for 42 feet southward, where it bent east and south again. Room 18 yielded a rectangular tablet of copper, terra-cotta beads, etc. (HR 4799) and a pottery lamp, faience beads, and a terra-cotta wheel (HR 4800), all of which were lying 4 feet below the surface. From Room 19, at depths of 5 ft. 3 in. and 3 feet respectively, came a well-preserved pottery vessel (HR 5704, Pl. LXXXI, 56) with flat base and bulging body and a painted jar with neck broken off (HR 5741).

Copper-wire chain.

House LIX.—Of this structure, which adjoins the one described above, only one room measuring some 16 feet along each side internally has so far been excavated. The rest of the building lies buried on the south and west sides. An object worth recording which was found here was a piece of a copper-wire chain (HR 4410, Pl. CXLIII, 27), which was lying 2 feet below the surface. It consists of two entire links and part of a third. A fragment of a grinding stone with square feet (HR 5707) and two other slabs which must have served the same purpose (HR 5825) also came to light in this room at depths of 5 and 3 feet respectively.

House LX may have been entered from the narrow lane behind it or from that to the east of House LVII, but no entrances have survived on either side. The S.W. end of the building, which would appear to have been an open courtyard, has been destroyed, and the rest of the building has undergone alterations at a later date. The rooms in the rear were

found filled in with sun-baked bricks. Two vertical water-chutes in the south wall of Room 24 deserve notice.

Combined shop and dwelling house.

House LXI would appear to have been a combined shop and dwelling house. In Rooms 31 and 32 I found several lumps of unrefined copper, ashes, and fragments of rough crucibles which must have been used for smelting copper. Room 31 also yielded, 4 feet below the surface, a button-shaped ear-ornament of faience adorned with a lozenge-shaped pattern enclosed by a circle, a copper tablet (HR 5549), and a stone ring and beads of carnelian and faience (HR 4806). From Room 30 were secured, at a depth of 4 feet below the surface, a necklace spacer, two beads and eight pieces of bangles (HR 4804), all of faience, as well as a stone weight (HR 4805). A miniature faience cone with closely grooved surface (HR 4480, Pl. CLIII, 28) was also found 2 ft. 6 in. below the surface in this part of the house.

Rooms 27 and 28 have brick-paved floors. The former produced, from 2 feet below surface, a large number of minor antiquities, including a large conical weight stone (HR 4609) and a terra-cotta female figure with the head broken off, terra-cotta beads, and painted and plain potsherds (HR 4610).

House LXII consists of an open court (36) with a pair of rooms on each of the north and south sides. The entrance chamber (34) also served as a shop. The other rooms must have been living rooms, but there is no separate entrance to give access to them. Room 37 yielded a fragmentary square boss seal of steatite (HR 4435, Pl. CXV, 543) at a depth of 1 foot. The lower right corner is broken off, carrying with it the hind part of the unicorn. A better preserved seal of the same type, material, and device (HR 4436, Pl. CIX, 231) and with a pictographic legend was also found at the same spot. From the court (36), 3 feet below the surface, came three *linga*-shaped cones (HR 5539, Pl. CLIII, 21–3) fashioned out of the nuclei of conch shells. They average 1·9 inches high.

Linga-shaped cones.

Shop LXIII.—An entrance from Third Street leads into 39, which might have been an open court, and behind it are a small room (40) and a staircase. A large pottery jar (HR 5943) with the usual conical base was found bedded in the floor of Room 39 close to the street entrance. It was filled with earth and the only antiquity found in it was a small pottery jar (HR 5944).

House LXIV which, to judge from its south exterior wall, must originally have been a building of some importance, has come down in a very dilapidated condition, and on the west side it is difficult even to disentangle its limits from those of House LX behind it. The structure has also undergone much rebuilding. So much, however, seems certain, that it was entered from Tenth Lane, to be referred to below, by one or possibly two doorways, both of which were, however, bricked up in ancient times. Room 43 produced two square boss seals of steatite (HR 5656, Pl. CIX, 222, and HR 5699, Pl. CIX, 251) with the unicorn device and an ivory rod (HR 5715), square below, circular above. They were found 5 to 6 feet below the surface.

Tenth Lane, which issues from Third Street to the south of Shop LXIII, is only 2½ feet wide at its mouth, widens to 6 feet in front of House LXIV and to 16 feet where it turns south. At this corner a well-built staircase ascends to a raised area on the west, which has not yet been explored. The treads are, as usual, steep but finished in this case with a course of bricks laid on edge. The western section of the lane abounded with ashes, and a patch of fused brickwork in the face of the wall to the west indicated the exposure of this lane to a fierce conflagration, which also presumably destroyed House LXVI on the east side. Had there been time for it, I would much have liked to follow this lane up to the edge of the mound.

An interesting terra-cotta figure was found in this lane, 5 ft. 6 in. below the surface. It represents a man standing full front in complete nudity (HR 5368, Pl. XCIV, 11; height 5·6 inches). The right hand and legs below the thighs are broken off. For the rest, the figure is in good preservation and retains traces of the colour with which it was originally painted. The navel is represented by a hole, and the eyes and nipples, as usual in these crude figures, by separate dots of clay applied after the completion of the figure. **Painted figure of nude man.**

Block 9

Only two houses, Nos. LXV and LXVI, have so far been explored in this area. They stand wedged, one in front of the other, at the southern end of Third Street and originally formed one house, with dimensions of 48 feet in length from east to west by 39 feet in width along the street. The original house had three entrances in the east wall and another entrance between Room 1 of the front section and the courtyard (6) of the back portion. When the house was partitioned into two separate dwellings, the latter doorway was bricked up and another thin wall carried against it, to prevent ingress from the eastern portion

Thus separated, House LXV is much smaller in size than the other structure, and consists of a small reception room (3) with two doorways on the south, a staircase constructed at its side, a small courtyard in the middle, and two rooms on the north, which may have been reserved for the use of the family. Whether the space in the N.E. corner of the structure was left open to the sky is not apparent. The thin wall to the right of the northern entrance was obviously meant, as in some other buildings, to secure privacy to the women folk. A stone mortar and pestle (HR 5823) was found 3 feet below the surface in Room 2, while Room 3 produced several objects, including miniature pottery vases (HR 6070), a broken spear-head of copper (HR 6071) and a stone weight (HR 6072), all of which were lying 10 feet below the surface.

House LXVI (Pl. LII, *d*).—As a reference to the accompanying plan (Pl. XXXIX) will show, this building has a very narrow frontage—just wide enough to accommodate the doorway. The entrance chamber (4) was filled with débris in which charcoal and ashes predominated, owing no doubt to the fire referred to above in connection with Tenth Lane. An object of interest found in this room was a large-sized cone of stone resembling a *liṅga* (HR 6088), which was lying on the floor against the north wall. The room also yielded a carnelian bead, two faience beads, and a piece of a bangle of the same substance (HR 6089).

This entrance chamber led into an open space from which a narrow passage runs back to the west wall of the house. A ruined staircase has survived along the north side of this passage, and to the south of it are two tiny cells, with corbelled openings in their walls. These chambers are only 4 feet deep, and they may have been used as store-rooms or for other purposes.

The rest of this house is identical in plan with House LIV, like which it has a courtyard on the north with ranges of rooms on the south and west. Of these, Room 8 is only 3 feet wide and like the corresponding chamber in No. LIV might originally have been meant for a staircase, but on second thoughts left vacant and the staircase provided in the southern portion of the structure.

The minor antiquities recovered from this house included a copper antimony rod broken in two pieces (HR 5896), a fragmentary carnelian bead (HR 5897), which were lying in Room 7, and other small objects.

Chapter XIV

VS AREA

THE VS Area is an extensive irregularly shaped mound immediately to the north of the HR Area, from which it is separated by a broad depression through which now passes the cart track from Dokri, and which in ancient times marked one of the principal streets of the ancient city. The exploration of the VS Area was first taken in hand in 1923–4, when Mr. Vats sank a 10 ft. trial trench in the centre of the mound running east and west and a second trench at right angles to the first running north and south. The former trench exposed the western portion of Lane 1, with lines of rooms on both sides and portions of other rooms further east ; the latter trench ran through House XVII and between Houses IX and XI. In 1924–5 similar trial excavations were carried out by Mr. K. N. Dikshit at the eastern and western extremities of this mound. The diggings at the western end are represented in the accompanying plan by Houses XXXVII and XXXVIII and a few rooms to the south of Lane 3 belonging to the northern portion of House XXVII. Excavations on an extended scale were again carried out on this area by Mr. Vats in 1925–6, when Sir John Marshall was himself in charge of the Mohenjo-daro excavations. These operations brought to light buildings VIII to XXXVIII, excluding those which had been disclosed by the previous years' work. My own excavations were responsible only for the clearance of Houses I to VII in the western or A Section, the few structures to the east (Section B) and the broad street between them, which, as stated above, proved to be a continuation of First Street in the HR Area. (See plans on Pls. LIII and LVII.)

Besides First Street and some small alleys, the excavations have brought to light five well-defined lanes (Lanes *1* to *5*) which divide the thirty-eight buildings exposed into seven separate blocks. The buildings have been numbered consecutively in Roman numerals from south to north and, as in other areas, the rooms in each block have been given a separate serial number. Most of the buildings so far excavated on this area appear to have been private dwelling houses, which are assignable to the Intermediate and Late Periods. Deep digging was undertaken at four different spots, marked DD1 to DD4, and revealed the existence of earlier strata beneath those referred to above. Virgin soil could not be reached in any of these pits owing to the inrush of sub-soil water.

Block 1 (Plan LIII)

This group of buildings stands to the west of Street *1* at the southern extremity of the VS Area. It is bounded on the north by Lane *1*, which has a width of 4 to 10 feet. On the west the limits of this block have not yet been ascertained but it is obvious that, on the south side, it extended up to the edge of the broad street which runs down the wide depression separating the VS from the HR Area. So far, sixty two-rooms have been exposed in this block and divided into seven separate buildings (*I to VII*).

House I is a substantially built structure of a much larger size than the common run of private dwellings in this city. It measures 144 feet from east to west, but its southern portion appears to have perished and the total width cannot be determined. Even so, nineteen rooms (27 to 45) have already been brought to light. Rooms 30 and 40 are of considerable size and Room 33, which measures 34 ft. 6 in. by 32 feet, must have been an open court from which the light was admitted into the rooms ranged about it on all sides. The long narrow room to the north of this courtyard contains a ruined flight of steps, which gave access to the upper storey. The outer wall on the east side is 4 ft. 8 in. thick, and that on the north 3 ft. 10 in. The latter is standing to a considerable height. Only one entrance has so far been traced on the east side of the building, but there must have been one or two more on the south.

This building is probably to be assigned to the Intermediate Period. Its level conforms very nearly with that of the buildings of this Period in the HR Area, and the sills of its doorways are about 11 feet below those in Houses II to V on the top of this mound

The minor antiquities discovered in this house were many and various. Room 37, which could not be cleared to its original floor level, yielded a large collection of interesting pottery vessels and other objects (VS 3622 to 3662), which were lying in the N.E. corner of the room at a depth of 6 feet below the surface.[1] The largest and most noteworthy of these vessels is a singularly fine vase with a pointed base (VS 3638*a*, Pl. LXXXVI, 14; height 2 ft. 3 in., diameter at the shoulder 1 ft. 5½ in.) in perfect preservation and similar in shape and material to VS 1080 unearthed in the same area in 1925–6. The present collection also includes another vase of the same shape and size (VS 3651) but not as well-preserved. Other interesting antiquities in this collection were two bottle-shaped bulbous-bodied vessels of fine clay with red slip (VS 3642, Pl. LXXXVI, 8 and Pl. LXXXVI, 11), two fragments of flat dishes with low rims (VS 3639, Pl. LXXXVI, 3 and Pl. LXXXVI, 4), a large bowl blackened round the edge (VS 3649, Pl. LXXXVI, 6), a pot-bellied terra-cotta figurine (VS 3633; height 3 inches), four chert knives (VS 3624), a copper rod broken in three pieces (VS 3626), a quantity of decayed date seeds (VS 3627), four terra-cotta bangles (VS 3630), ten miniature vases of fine clay (VS 3636), three jug-shaped vases (VS 3648, Pl. LXXXI, 58 and 59 and Pl. LXXXVI, 15 and 19), three miniature vases (VS 3650) which were found within a larger jar of the same material (VS 3645) and two animal's teeth (VS 3655). At the same spot was also lying a curious barrel-shaped hollow pottery object (VS 3612, Pl. CXXXIII, 14) with a very narrow hole at one end. It is made of sandy clay and is 8·8 inches in length and 3 inches in diameter. Its exact purpose is not known, but it may have been intended for a flesh-rubber. Other objects found in this house were a round copper pin or nail (VS 3626; length 2⅞ inches) with a very fine point, three shell dice with various patterns (VS 3588–9 and 3591) which came to light in Room 36, 3 feet below the surface, a square boss seal of dark grey steatite (VS 3595, Pl. CVII, 117) with a line of pictographs and the figure of a unicorn, found in Room 35, a black stone bead (VS 3666) found in Room 39, a rectangular copper seal (VS 3524) found in the middle of Room 32, 7 feet below the surface. In Room 30 were found, 7 to 10 feet below the surface, a lump of mica (VS 3528), an oblong seal (VS 3553, Pl. CXIII, 457) with a line of pictographs but no animal device, a chert knife (VS 3554), a terra-cotta sealing (VS 3513, Pl. CXVI, 11) with pictographs and rhinoceros device on both faces, a rectangular copper seal (VS 3526, Pl. CXVIII, 5), and the upper part of a large and thick square boss seal (VS 3546, Pl. CXII, 404) of dark steatite on which a line of pictographs only remains. A rectangular copper seal

Vase with pointed base.

Decayed date seeds.

[1] Although these objects come from Intermediate I or II stratum, it is likely enough that later objects may have become mixed with them in the course of denudation.—[Ed.]

(VS 3504) was also recovered from Room 28 at the depth of 7 feet below the surface, a copper hook (VS 3598) from Room 44, 1 foot below the surface, a terra-cotta female figure (VS 3586) from Room 31, 2 feet below the surface, and a copper chisel broken in two pieces (VS 3599) at the same depth from Room 43.

House II.—Rooms 1 to 26, covering a rectangular area of 86 ft. 10 in. by 64 ft. 5 in. to the north of the building just described, appear originally to have belonged to one and the same house, which had two entrances opening into the main street on the east and another into Lane 1 on the north. At a subsequent date, the building appears to have been divided off into four separate dwellings [1]—Nos. II to V. Of these, No. II consists of three good rooms, 2, 23, and 25 communicating with each other, and a few smaller ones—3, 22, 24, 26, 21, and 20. The main entrance to this house was from the main street into Room 23, and a flight of steps has survived in front of it. All the three main rooms were neatly paved with brick on edge and the paving in Room 23 has come down in a surprisingly good state of preservation (Pl. LIV). Noteworthy features of this room are five conical pits or holes sunk in the floor and lined with wedge-shaped bricks, apparently meant to hold the pointed bases of large storage jars, and what seems to have been a very narrow well in the S.E. corner. The small room (22) at the back of Room 23 is paved with brick laid flat. Room 2 has a small chamber screened off in its N.W. corner and a paved bath or floor for cleaning utensils in the other corner, with a covered drain to carry off waste water into the cesspit in front of Room 1. Room 25, at the southern end of the house, has a staircase which led up to the upper storey. Only five treads of this staircase have survived. The narrow Chamber 21 behind this staircase was found to be choked with ashes and charcoal and may have been a kitchen.

Only a few objects of interest were recovered from this structure. A piece of shell inlay, a chert knife, and a fragmentary shell bangle (VS 3360) and two painted potsherds were found in Room 23. Room 22 yielded a fragmentary terra-cotta female figure (VS 3368) and a fragmentary square boss seal of white steatite (VS 3359, Pl. CIX, 209), with a pictographic legend and a figure of a unicorn. The lower portions of the animal and the standard are missing. The legend consists of two lines, the lower one of which contains only two pictographs. Two terra-cotta tablets (VS 3429) were recovered from Room 25, a broken copper knife (VS 3575) from Room 26, and a terra-cotta pot-bellied figure (VS 3529) and pottery jar with a pointed base (VS 3541) from the kitchen (Room 21).

House III consists of only two rooms (1 and 4), one in front of the other, in both of which large fragments of brick pavements have survived. A vertical water-chute in the thickness of the front or east wall of Room 1 discharged itself into a covered cesspit, constructed beneath the doorstep.

The minor antiquities found in this house included an ivory gaming die marked with geometric patterns (VS 3310) broken in three pieces, a copper spear-head broken in three pieces (VS 3322), a faience bead (VS 3323), two chert knives (VS 3241), several tiny discoid shell beads (VS 3234), and a fragment of a faience bangle (VS 3355), all of which were recovered from Room 1. The smaller Room 4 yielded an imperfect and worn square boss seal of white steatite with pictographs and unicorn device (VS 3391, Pl. CVII, 131), an ivory cube (VS 3392, Pl. CXXXII, 34) incised with a circle enclosing six smaller ones on each face, a lump of red ochre (VS 3374), a cube-shaped stone weight (VS 3287), and several pottery jars, lids, etc.

[1] These divisions appear to me problematical. There may have been two or three houses only in the Late Period.—[Ed.]

House IV.—A part of this structure was explored in 1925–6 and the rest in the following season. No minor antiquities were found in this house, but a feature of interest is a series of deep niches in the inner walls of Rooms 7 and 8. A narrow passage along the south wall gave access to the other two Rooms 5 and 6.

Deep niches in walls.

House V.—Sandwiched between Houses I and IV, House V was presumably entered from the narrow lane running to the west, though no indications of any doorway on that side have survived. There are some eleven rooms included in this building. One of them (10) was almost certainly an open court, and it is not improbable that Room 19, from which a flight of two or three steps leads into Room 14, was also left open to the sky. The long narrow space enclosed by walls to the south of Room 13 probably contained a staircase leading up to the roof. None of the rooms have paved floors save No. 15, which has also a covered drain along its west inner wall and would appear to have been a bath. In the middle of this room was a large earthenware jar (VS 3454) with its pointed base buried to a depth of 2 ft. 3 in. in the floor. The upper portion of the vessel, which projected above the floor, is broken off. The contents included six goblets with pointed bases, one of which contained a well-shaped miniature vase, a shell palette for mixing colour, a round ball—possibly a weight—and a broken terra-cotta animal. One of the goblets found in the big jar contained an oblong seal with its back cut away (VS 3454, Pl. CXIII, 444). It is inscribed with a line of five pictographs, but no animal device. Another goblet contained the vertebrae of a fish.[1] This room also yielded a terra-cotta wheel (VS 3464), which was lying 4 feet below the surface. In Room 10 were found a copper chisel broken in two pieces (VS 3465), a cubical stone weight (VS 3466), several beads of faience, etc., a fragmentary chessman-shaped *liṅga* of faience, and a broken terra-cotta dog (VS 3497). Room 19 yielded a terra-cotta female figure (VS 3518), of which the legs and the left hand are broken off.

Earthenware jar with funerary vessels and other objects inside.

Fragmentary liṅga.

House VI, which measures some 45 by 33 feet, was originally open on three sides. At a subsequent date the lane on the west was closed at its northern extremity. There are two entrances, one on the north leading into an open courtyard (52) and the other on the east. The other rooms are relatively spacious, each with its door opening into the court or into the rooms adjoining it. The niche in the north wall of Room 46 is 1 ft. 9 in. deep and may have been fitted with wooden shelves. A square boss seal of steatite (VS 3594, Pl. CV, 54) with a line of pictographs, as usual, at the top and a figure of a unicorn, was found in the S.W. corner of Room 50, 5 feet below the surface, and close to it two fragmentary faience bangles (VS 3603, Pl. CXXXIV, 1) decorated with chevron patterns. A piece of another bangle of the same material with a row of zigzag patterns (VS 3602) was found in the closed lane to the west of this structure, 2 feet below the surface.

House VII is a poor structure consisting of very small rooms at the back of what would appear to have been a fairly spacious courtyard (55) along the east wall. Part of this building to the north remains unexplored.

Block 2

Block 2 is a big complex of buildings bounded on the east by First Street, on the south by Lane 1, and on the north by Lane 2. So far, ten buildings have been more or less completely excavated in this area, but the western limits of the block have not yet been reached, and it is not unlikely that other structures will come to light, when excavation is extended in that direction. The most striking of the buildings so far exposed are Nos. VIII and XIII, which occupy a commanding position along First Street.

[1] For the meaning of this and other jars and urns containing collections of smaller vessels and other objects, see Chap. VI, pp. 86–8.—[Ed.]

Plan of house disproportionately narrow.

House VIII (Pl. LVI, a) is a large rectangular structure measuring some 105 feet long from north to south by some 32 feet east to west. The building has come down in a much dilapidated condition, especially the front or east wall, where no traces of any of the entrances have survived. The plan, moreover, has been complicated by later alterations and additions, and the inner arrangement at some places is still far from clear. The space marked 15 in the plan appears to have been the courtyard, but it is obvious that one or two rooms in the southern portion of the house must also have been left open to the sky to light up the adjoining rooms. Some of these rooms are unusually narrow; thus Room 14, the floor of which was covered with ashes, is only 5 feet wide. Room 6 adjoining the main street contains a well, lined as usual with wedge-shaped bricks and surrounded by a well-built brick paving. The well is 4 ft. 5 in. in diameter and was cleared to a depth of 34 ft. 9 in., but the water level apparently lies 4 or 5 feet deeper down. A well-preserved drain carried the waste into a brick-lined tank on the outside, which was probably connected with a finely built drain of larger size, which runs along First Street in front of this house.

Several objects of interest were found in this house. Room 1 yielded, at a depth of 4 feet from the surface, a fragment from the top of a square boss seal of steatite (VS 3331, Pl. CXIV, 497) on which only a part of the legend has survived, another seal of the same type and material (VS 3389, Pl. CVIII, 163) with a unicorn and a defaced pictographic legend, a grindstone (VS 3347), a fragment of a faience bangle (VS 3362), a copper pin or awl (VS 3372), a small copper chisel (VS 3388), a chert flake, and a fragment of a shell bangle (VS 3316). A copper rod with a sharp point, possibly meant for engraving pictographs (VS 1251), was found 6 feet below the surface in Room 3 and a finely engraved and well-preserved square boss seal of an unusually large size (VS 2040, Pl. CIV, 38), 2 ft. 6 in. below the surface in Room 5. The obverse of the seal shows three deeply cut signs above and a well-executed unicorn with the usual standard in the lower field. Another seal of the same type and material and with the same device (VS 1037, Pl. CIII, 16) was recovered from Room 4. A noteworthy feature of the legend is a solitary pictograph in the middle of the second line and above the back of the animal. Two other seals and a well-made pottery lid with a projecting handle (VS 2961, Pl. LXXXII, 55) were also found in this room. One of the seals (VS 1059, Pl. CV, 66) is similar in all respects to those described above; the other (VS 1190, Pl. CXII, 395) has no animal device. A fragmentary square boss seal of steatite (VS 3093, Pl. CXI, 331) was found in Room 15. It exhibits a line of pictographs and a humped bull with a flowing dewlap, whose head is broken off. This room also yielded a well-shaped conical weight of slate (VS 1899, Pl. CXXX, 34; height 5·9 inches, diameter 7·1 inches), with a hole at the apex by which it could be lifted between the fingers. Other antiquities found in this house were a spherical object of stone (VS 1821; height 5½ inches) well smoothed at top and bottom and a grinding stone (VS 2231), which was subsequently changed into a door-pivot.

Description of building.

House XIII (Pls. VI, LV, and LVI, c).—This is a large and well-preserved building comprising as many as twenty-eight rooms (57 to 81).[1] Of these, Courts 69, 67, and 57 (Pl. LV, *a* and *c*) on the front side are larger than the rest. They were all originally paved with brick on edge, but now only strips of the pavements remain in Rooms 69 and 57. The two brick-lined hollows in the floor of the latter room were meant, like those noticed above in connection with Room 23 in House II, for the reception of large store jars. The row of small rooms opening off Room 69 on the north side may have served originally for visitors, while the finely paved room (72) adjoining them was no doubt a bath. The covered drain which carried off waste water from this bath and fell into the street on the east is still preserved.

[1] For further particulars of this house see pp. 20–2 *supra*.—[Ed.]

Room 75 was presumably left open to the sky[1] to light up the well-built staircase which led to the roof from the southern end of this room. Nine steps of the staircase are in excellent condition. They are 5 feet broad, but the treads are, as usual, shallow and the risers steep. Farther west is a large room (76) with five deep niches with double reveals and behind it another flight of steps and a smaller room. To the south of Room 76 is a row of four smaller chambers, one of which (78) communicated with a very narrow cell at its back by a narrow corbelled opening (Pl. LV, *b*) just wide enough for a man to pass through.[2] A third staircase is placed to the west of the middle foreroom (67). The S.W. corner of the house behind Room 57 is occupied by a narrow passage lined with tiny rooms on the north side. One of them contains a well, which could not be cleared out.

Perforated lattices.

The excavation of this house brought to light a large number of minor antiquities, many of which came from Room 76 and another room at the back of the structure. One of the finds from the former room consisted of fragments of a pierced lattice of alabaster (VS 2736, Pl. CXXXIII, 11), which presumably filled the windows or ventilators at the top of the wall. Perforated screens with geometric patterns have been met with before in Kushān and Gupta buildings. It is now patent that perforated lattices were known and employed in the Indus valley in the prehistoric period.

Weights and slate boxes with compartments.

Shells used for bangles.

Other objects included a ring-stand broken in two pieces (VS 2939, Pl. CI, 33), a little vase (VS 2877, Pl. CI, 15), a bottle with cover (VS 2671, Pl. CI, 12), all of alabaster, two fragmentary stone plates with low rims (VS 2928, Pl. CI, 21 and 2941, Pl. CI, 32), a large conical stone weight (VS 2953 ; height 9 inches) with flat bottom and vestiges of broken chase at the top, another large stone weight of the shape of an egg (VS 2952), fragments of two square slate boxes each divided into four compartments (VS 2881, and 2505, Pl. CXXXI, 36 and 37) and resembling an Indian goldsmith's scale and weight box, a cylindrical object of ivory (VS 2651, Pl. CXXXII, 15) decorated with broad wavy patterns separated by plain horizontal bands, a faience nose-ring (VS 2589), a phallic emblem (?) of shell (VS 2512), and a terra-cotta head with tall conical head-dress (VS 1555, Pl. XCV, 23). Other antiquities of interest found in this house were a hoard of forty-one cores of shells (VS 3192), all serviceable parts of which had been used for the making of bangles, etc., a cubical terra-cotta object (VS 2585) pierced with one to six holes on different faces, possibly a gaming die, and six seals. Three of the seals are of steatite, viz. a fragment (VS 2543, Pl. CX, 313) on which the head of a short-horned bull feeding from a trough and two pictographs remain, another fragment of a similar seal (VS 2582, Pl. CIX, 250) on which only the body of a finely engraved humped bull survives, and another fragment of a seal of the same type (VS 3094, Pl. CXII, 388) on which a line of pictographs alone is preserved. A fourth is a faience sealing (VS 3063, Pl. CXVI, 4) with a figure of a rhinoceros, and the remaining two (VS 2590 and 2937) of copper.

House XIV.—This building which, like the two just described, faced towards the main street on the east, has so far been only partially exposed. The eastern portion is separated from No. XIII by a narrow space, not more than 6 inches in width. Like many other houses on the site, this house had an open court (82), with the usual staircase on one side. The little chamber beneath the staircase may have been used as a privy or for the storage of firewood, etc. There are three rooms in the rear of the house, two of which (85 and 86) were supported on the south side on three brick-built pilasters

[1] This is doubtful. A window was specially provided to admit light from Court 69 across Room 73 and the presence of this window makes it very unlikely that Room 75 was open to the sky.—[Ed.]

[2] This group of small chambers was filled in solid, as a precaution against flooding.

in place of a continuous wall. In addition to the main entrance on the east, the house had another doorway at the back which opened into a narrow alley running into Lane 2 on the west. At a later date this alley was absorbed into House XV.

The only minor antiquities from this building that deserve mention are a fragment of a rectangular seal of steatite (VS 1694, Pl. CXIII, 434) which like other seals of this shape had no animal device, two beads of the same material (VS 3170), a phallic emblem of white limestone (VS 2572), and a fillet of gold (VS 3091, Pl. CXVIII, 14), similar to and of the same length and width as those referred to above. A noteworthy feature of the present specimen is a representation, at each end, of the double standard, which is invariably found on the seals with the unicorn device.

House XV.—This structure stands in the angle of Lane 2, but it may originally have extended eastward up to the line of First Street, in which case the incomplete structure designated XIV may have formed part of this building. This, however, is a mere conjecture and must remain so, until the unexplored portion to the north is excavated. For the rest, the plan of the house is clear enough. It had an open court (90) in front, the extent of which cannot at present be determined. Behind it is a narrow staircase in the midst of a line of rooms, which may have been used for the reception of visitors, accommodation of servants, etc. The rear portion of the house, which was reached through Rooms 91 and 98, would appear to have been set apart for the use of the womenfolk. It consists of ranges of rooms disposed about a square courtyard (96), all of which bear witness to an extensive remodelling in the Late Period.

Seal with device half man, half bull of Babylonian appearance.

The only find of note was a seal (VS 1574, Pl. CXI, 357) resting a few inches below the broken pavement of Room 91. Three of the corners of the seal are broken but the main part of the device is fortunately entire. It portrays a horned and tailed creature attacking a mythical horned tiger. The hybrid creature, half man, half bull, has a strikingly Babylonian appearance and calls to mind the hero Eabani wrestling with wild beasts.[1]

House XVI appears to have been a large oblong structure. So far, however, only two small rooms (105 and 106) in the N.E. corner, a larger room (108) in the S.E. corner, and portions of walls and the lowest steps of a staircase in the middle have been exposed. Several interesting antiquities were discovered in this house. They included five square boss seals of steatite (VS 1329, Pl. CIII, 15; VS 2328, Pl. CIV, 24; VS 2374, Pl. CIX, 217; VS 2541, Pl. CVIII, 177; and VS 2542, Pl. CVII, 121) in varying states of preservation, but all showing a pictographic legend and the unicorn device. Of VS 2876, Pl. CXII, 364, which is also of the same type, only a small fragment showing the hind part of an elephant was recovered. VS 2846, Pl. CXIII, 460, is an oblong seal with two or three pictographs but no animal device. Three of these seals were found in Room 105. Two inscribed seals of copper (VS 1104 and 1988, Pl. CXVII, 8) were secured from the stair in the middle of the house and Room 107 respectively, and two phallic emblems of faience (VS 1888, Pl. CLV, 23, and VS 2430) from Rooms 105 and 104. Mention may also be made of a narrow-necked painted pottery bottle (VS 2521) and another jar of the same material (VS 2716, Pl. LXXXI, 53), which was lying in Room 105.

Inscribed seals of steatite and copper.

House XVII is a small square structure at the back of House VIII. The enclosing wall on the south side is 2 feet thick and pierced by a broad doorway, 5 ft. 4 in. wide. The interior walls are, however, thin and carelessly built. There are some ten rooms in this house, including a narrow passage which runs east and west between the front rooms and those in the rear. The narrow alley on the south side of the structure has a covered drain terminating in a small brick-lined cesspit.

[1] L. W. King, *History of Sumer and Akkad*, p. 77.

The minor antiquities recovered include a rectangular steatite seal (VS 2289, Pl. CXIII, 447) with a line of well-preserved pictographs, a square boss seal of the same material (VS 3026, Pl. CXI, 333) with a one-line legend of pictographs along the top and a finely engraved humped bull with a large flowing dewlap, which was lying 8 feet below the surface in Room 113. From the same room also came a conical stone weight (VS 2321, Pl. CXXX, 33; height 1 ft. 3 in.) with a handle in the shape of a now broken projecting rim at the top, a pottery jar with rounded base (VS 2962) which contained a highly polished ball of variegated stone, the lid of a stone casket and four beads of faience and shell, and a roughly shaped cubical block of chert (VS 3210), 3⅛ inches square and 2¼ inches high, presumably an unfinished weight. Room 112 yielded a chert bead (VS 2142) with a number of shallow cavities for inlays. A square boss seal of steatite (VS 1754, Pl. CX, 314), with a line of pictographs and a short-horned bull feeding from a trough, was found in Room 109 to the west of the house. This room presumably formed part of House XIII and provided a side entrance to it from the narrow alley on the south. **Seals and stone weight.**

House IX.—Houses IX to XII are conveniently situated along the four sides of an open space now measuring 54 feet long by 20 feet wide and approached by narrow alleys from north and south. Of these buildings, No. IX had two entrances facing House XVII on the north, and one or possibly two others on the south. The eastern portion of this structure would appear to have been a separate dwelling. Rooms 19 and 27 are larger than the others. The former has a series of seven broad niches sunk in its walls at the height of 5 feet above the floor, and a flight of steps to give access to the roof at its S.W. corner. One of the doors opening on this court is as much as 6 feet in width; other doorways in this house average 3 ft. 3 in. wide. The rooms in the middle of the house are small and include a paved bath with its usual outlet. Among the minor antiquities recovered from this structure were a conical stone object, 1 ft. 3 in. high (VS 2835), with a plain raised band above the base, the exact purpose of which is not known, a stone pedestal in the shape of an inverted bowl with a round socket sunk in the flat top (VS 2648), a truncated cone of red sandstone (VS 2767; height 4 inches), a copper chisel (VS 2701; length 6·9 inches), and an ivory object resembling a human leg (VS 2548; Pl. CXXXII, 28) length 2·65 inches.

House XI, which stands at the back of House VIII, is a small oblong structure comprising seven or eight small rooms, one of which at the S.W. corner contains a well, 2 ft. 10 in. in diameter and lined as usual with wedge-shaped bricks. The floor around it was provided with a drain which opened into a square cesspit in the lane on the south. Room 39, with a finely paved floor to the east of the well, must have been a bath. The well was cleared to a depth of 13 feet. No objects of interest were discovered in this house.

House X was excavated partly in 1924–5 and partly in 1925–6. The eastern portion of the structure has suffered much from denudation. The rooms in the other half include a paved bath (31). The only antiquities worth mentioning were a faience hare (VS 2215), an unfinished steatite seal (VS 2544) with a slanting line to demarcate the fields for the animal device and the pictographic legend, and a whetstone of yellow Jaisalmer stone (VS 3132). **Faience hare, unfinished seal and whetstone of Jaisalmer stone.**

House XII would appear to have been open on all four sides. Several rooms are of fair size, others are small. Those in the southern portion are remarkable for the number of niches in their walls. A large oblong area (50, 56) is enclosed at the back of the house to serve as an open compound. It has a staircase along the wall on the east.

The antiquities found in this building included two exquisite little squirrels of faience (VS 2869 and 2994), apparently from the same mould, which were lying 2 ft. 6 in. and 4 feet below the surface in Room 54 (compare with No. 7 in Pl. XCVI), a circular ivory disc pierced in the centre (VS 2985) plain on one side and convex on the other decorated with 32 double **Squirrels of faience.**

incised circlets arranged in three concentric rings, secured from Room 43, and a thick copper chisel (VS 2958), 3 inches in length and 1¼ inches wide at the cutting edge, from the compound at the back (104). Room 46 yielded a large earthen trough (VS 2982) and close by it a collection of earthenware vessels and other articles including eight goblets with pointed bases, two beakers, seven miniature vases, two lids, six cake-shaped tablets, and several terra-cotta figurines, one of which is a clean-shaven headed male with a collar round his head, two balls, a painted potsherd, a piece of chert, a piece of mother-of-pearl, and faience objects. A similar collection was also found in another room[1]; but a far more valuable find (VS 3092, Pl. LXXXVII, 2) was made in Room 43. It consists of two singularly attractive specimens of polychrome pottery bedecked with floral and geometric patterns in black and white on a red ground, the base of each vase being adorned with a row of lotus petals. The vases were found broken in pieces, several of which could not be traced.

Polychrome red, white, and black pottery.

Block 3

On this plot only two buildings (XVIII and XIX) have so far been completely explored and a third (XX) only partially.

House XVIII is a rectangular structure measuring 80 feet from north to south by 27 feet wide. The plan is of the usual type with a fair-sized courtyard (5 and 8) along the west wall and with rows of rooms ranged about the remaining three sides, though Rooms 1 to 4 may have belonged to a separate house. There are three entrances to give access to the house from Lane 4 on the west, opening into the courtyard and Rooms 4 and 9 respectively. The thin screen wall behind the entrance leading into the courtyard may have been meant to prevent the inmates being seen from the street or may have served to support the back wall of a verandah, while the little brick-paved chamber in the S.W. corner of Room 4 did duty as a bath.

Screen wall to hide inmates?

Vase of clay showing ibexes.

Among the minor antiquities secured from this structure, the most noteworthy were a copper bangle (VS 779), the lower half of a flat-bottomed vase of fine red clay painted with a row of seven ibexes with long horns reaching back over their bodies (VS 1107, Pl. XCII, 20), a square boss seal of steatite (VS 505, Pl. CIX, 243) with a line of pictographs above and a unicorn in the lower field, and three oblong copper seals. One of these (VS 888) was lying on the threshold to Room 7, 5 feet below the surface. It depicts an elephant feeding at a trough on one face and a line of pictographs on the other (cf. with Pl. CXVII, 11). The second seal (VS 1406, Pl. CXVII, 16), which was discovered in Room 1, is engraved with a figure reminiscent of a Babylonian deity. It is horned and holds a bow in right hand, and is clothed in a costume suggestive of leaves. The third copper seal (VS 1736) was found in Room 2.

Six skeletons found.

Length of skeletons.

In the street between Houses XVIII and XXXIII lay six skeletons (Pl. LIX, *c*), including one, at least, of a child (25), which from their position appear to be posterior to the adjacent remains. They occupied a space of 24 by 8 feet, and were lying in different positions. Nos. 24 and 25 lay on their backs with their faces turned towards each other. No. 23, which was the tallest, measuring more than 5 ft. 11 in. in length, was lying on its face, as was also No. 20, which was the best preserved. Its legs were outstretched and arms thrown forward in front of

[1] It is not unlikely that both these groups are funerary. See p. 217, note 1, and pp. 86–8.—[Ed.]

the head and bent at the elbows. Skeletons 21 and 22 were also lying on their backs. They are both exceedingly fragmentary, and of the latter nothing was left except part of the head and some of the ribs. The skeletons were all covered with loose earth, free from bricks. It is noteworthy that no artefacts of any kind were found on or near any of them, except a small ball of shell 1 inch in diameter (VS 1695) (cf. with Nos. 3, 5, in Pl. CLIII) and decorated with concentric circles, and three pieces of inlay of the same material, which were lying a little to the north of Skeletons 21 and 22. Over the legs of Skeleton 25 and the right arm and left shoulder of Skeleton 24 were also lying the vertebrae of some large animal, which probably came to be buried there by accident. From what has been stated above, it may be inferred that these were not regular burials, but were most probably the result of a tragedy, the exact nature of which will never be known. It may have been a severe epidemic or a sudden bloody raid or other calamity. The skeletons were preserved *in situ*, and examined in the following season by Colonel Sewell, Director, Zoological Survey of India, who removed and took away to Calcutta for detailed examination such of the bones as he considered necessary. His report on them will be found at pages 605 ff.

Death probably due to tragedy.

House XIX, which dates from the Late II Period, is situated to the east of House XVIII, from which it is separated by a narrow open space. It is a well-planned structure, comprising two courtyards (14 and 22), with ranges of chambers disposed round three sides of each, access to the courtyards being obtained through two entrances in the east outer wall. Room 13, adjoining the staircase to the west of the northern courtyard, was probably a kitchen, as it contained a thick layer of ashes, and Rooms 16 and 17 a bath. The south courtyard has a well in one corner, with a brick-paved floor around it, and a covered drain, which probably fell into the drain in Lane 3 to the south. The oblong room (24) at the south end of the house has two deep niches in the east wall and two doorways in the south wall. One of these is only 2 feet wide. It was bricked up at a later date, and remains blocked to this day. Among the few minor antiquities found in this house were a square boss seal (VS 665, Pl. CXV, 535), with a line of pictographs and a beautifully engraved figure of an elephant, which was lying 2 ft. 6 in. below the surface in Room 13, a neatly dressed and polished tablet of slate measuring 12·3 by 8·8 by 0·8 in. (VS 416, Pl. CXXX, 11), a small square copper tablet (VS 792), and a terra-cotta ball with round depressions for inlays which have all disappeared (VS 804, Pl. CLIII, 6). The last two objects were discovered in Room 24. Mention may also be made of a large pottery jar, 3 ft. 3 in. high (VS 125, Pl. LXXXIV, 19), which was lying in Lane 3 beneath the mouth of the drain issuing from the south wall of Room 25. It contained four pottery goblets with pointed bases, a tall cylindrical vase of the same material, a round faience bead, fragments of a coarse limestone platter, terra-cotta bangles, etc. (Pl. LIX, *b*), which were lying on the top of a mass of bricks near the bottom of the jar, some charcoal and a few animal bones.[1] Close by the jar was lying a limestone sphinx-like recumbent figure carved in the round (VS 116). The face of the figure has disappeared, and it is not possible to determine its precise character.[2]

Probable kitchen.

House XX has been only partially excavated, and does not call for any remarks.

A small plot, 25 by 30 feet (DD2 in the plan), to the south of this house was dug down to a depth of 36 feet below the surface, where water was reached, but not the virgin soil. The excavation revealed the existence, superimposed one above the other, of structural remains belonging to the three latest cities and remains of other structures underneath them. The minor antiquities brought to light at varying depths included a fragment of a square

Remains of several strata.

[1] As to the purpose of this and other similar jars containing smaller vessels and other objects, see pp. 86 ff.—[Ed.]

[2] It is evidently of the same class as the composite animals figured in Pl. C, 7 and 9.—[Ed.]

boss seal of steatite (VS 2049, Pl. CXII, 392), on which two or three pictographs alone remain, 2 ft. 6 in. below the surface; a potsherd from the neck of a jar of the pointed base type (VS 2269, Pl. CXV, 560), stamped with a pictographic legend, 3 ft. 1 in. below the surface; a painted potsherd (VS 2144), and a piece of a chert implement (VS 2148), 4 ft. 6 in. below the surface, a rectangular copper tablet broken in two pieces (VS 1900), 6 feet below the surface; an ivory rod with linear incisions (VS 2397), 8 feet below the surface; a collection of beads of different sizes and materials (VS 2626), 14 ft. 6 in. below the surface, two pottery vases, painted potsherds, and some animal teeth (VS 3028–32), 30 feet below the surface; an animal jaw and teeth, two terra-cotta phallus-like objects, a flat triangular terra-cotta tablet, and two pieces of conch shell (VS 3137–40), 36 feet below the surface.

Animal remains.

Block 4

This block covers a nearly rectangular area averaging 240 feet east to west by some 90 feet north to south, and consists of seven separate buildings (XXI to XXVII). Houses XXII and XXVII open on Lanes 2 and 5 respectively. The other houses were reached by two side alleys.

House XXI[1] is a comparatively small structure with an open courtyard (4) surrounded by a long narrow room on the east, two others on the south, and three very small chambers on the west. The chamber at the S.E. corner was at a later date converted into a bathroom, which stands at a height of some 4 feet above the level of the lane on the east side. It was presumably at this time that the corbelled window in the east wall of the bathroom was constructed to provide an opening for the drain which carried off waste water. It was probably at the same period, too, that the narrow chamber at the east end of the house was partitioned off from the open courtyard. The débris with which the last-mentioned room was filled yielded the remains of a large number of pottery goblets with pointed bases and, at a lower level immediately above the floor, a square boss seal of steatite (VS 623, Pl. CXV, 557) with a line of pictographs and a figure of a unicorn, an octagonal stone weight (VS 467), a stone figure of a quadruped with its head broken off (VS 2141), the handle of a spoon of shell (VS 572), two goblets with narrow bottoms, a standard brazier (VS 441, Pl. LXXXI, 28 and 29; VS 442, Pl. LXXIX, 7), and a broken pottery jar which contained some chaff of a cereal (VS 639).

Of the three small chambers in the western portion of the house, the one at the southern end (3) is 6 ft. 10 in. long by 2 ft. 4 in. wide internally (Pl. LIX, *a*) and is paved with finely jointed brick. It was found choked with ashes, charcoal, earthenware goblets with pointed bases, and a quantity of human remains weighing some four pounds. A few complete jars found beneath the top layer included two with close-fitting lids and four oval-shaped jars in one of which pieces of bones were still sticking. Among the bones Mr. Vats was able to distinguish pieces of a human skull and a few finger-joints. Other antiquities recovered from this chamber were earthenware dishes of various shapes, some painted potsherds (VS 673), imperfectly baked clay tablets, fragments of shell bangles, a pot-bellied terra-cotta figurine, a chert scraper, etc. The human bones, charcoal, and ashes found in this room may have been remnants of cremation pyres, but it is not apparent why they were buried here.[2] Bones and broken jars similar to those found in Chamber 3 were also met with in the narrow chamber between it and Room 2.

Human remains.

Probably cremated remains.

[1] This building can hardly have been a complete house, as it stands. It may have been part of House XXII, or else intended for some other purpose. Most of the interior walls are later additions.—[Ed.]

[2] For these remains, see also p. 87 *supra*.—[Ed.]

House XXII stands to the S.W. of the building just described. The main entrance was on the east side, where the outer wall is standing to a considerable height (Pl. LVI, *d*). The N.E. corner of the building is occupied by a small room (5) containing a well-built well surrounded, as usual, by a brick pavement in which a shallow cavity to hold the jars is still visible (Pl. LVI, *b*). The well is reached by a narrow passage running along the east wall of the house, from which a broader passage runs west to provide access to a staircase on the north (9) and a line of rooms including a capacious paved bath (13) on the south. The two large pottery jars, one in the passage in front of the well and the other in front of Room 12 must have been meant for the storing of water, grain, etc. The only antiquities worth recording are a square boss seal of steatite (VS 2652, Pl. CV, 41), with a line of pictographs and a figure of a unicorn, from Room 12, an alabaster couchant figure of a ram (VS 2139), which was recovered from Room 13, an *āmalaka*-shaped object of stone (VS 3206), the terra-cotta head of a female figure (VS 1947, Pl. XCIV, 1) with two fillets on the forehead and four necklaces round the neck. The significance of the basket-like ornament on the proper left side of the head is not understood.[1] Of the two fillets, the one of pointed shape is interesting as being of the same form as the gold fillets included in the jewellery find (HR 4212, *a*) secured by me from Room 8 of House VIII in the western section of the HR Area. A large open space to the north of this house was found filled with sun-dried brick laid in regular horizontal courses. A rectangular pit, 30 feet long from east to west by some 12 feet wide, was sunk to the depth of 6 or 7 feet through the filling but disclosed nothing of interest.

Terra-cotta head with basket-like ornaments.

House XXIII has come down in a very ruined condition but it was a very well-built house of the Late Period. The N.E. corner has completely disappeared and the rest of the structure, particularly the middle portion, is disfigured by later additions. Foundations of the Early Period are also discernible under some of the walls. Several minor antiquities of interest came to light in this house. They include a square boss seal of steatite (VS 47, Pl. CVI, 90) bearing a line of pictographs and a figure of a unicorn, found in the central courtyard (21), a similar seal (VS 49, Pl. CVI, 99) which was lying in Room 23, two other similar seals (VS 1468, Pl. CVII, 130, and VS 2989, Pl. CVII, 119) from Rooms 21 and 15 respectively, and a fragment of a circular steatite seal (VS 3027, Pl. CXIV, 478) on which a part of the marginal legend has survived but no traces of the animal which no doubt occupied the central field. The legend on VS 49, Pl. CVI, 99 deserves special attention in connection with the question of the direction in which the legends on the Mohenjo-daro and Harappā seals should be read. This legend consists of two lines, of which the first or upper line fills the entire width of the tablet from edge to edge. The second line has only one sign, and instead of being inscribed at the right or left end, this sign is engraved in the middle of the line above the back of the unicorn. Now, a glance at the photograph of the seal will show that the space corresponding to the right end of the line is filled by the head of the animal, though there is plenty of available space at the other end. The fact that the symbol in the second line was not engraved in the blank space at the left side appears to me to corroborate my view that the direction of the script was from left to right[2] (*vide* remarks above in connection with the seal HR 5629 found in House LV in Section B of the HR Area,[3] subject

Direction of script.

[1] See also pp. 34 and 338 f.

[2] Such as it is, the evidence of this seal seems to me to point to an opposite conclusion. Had the writing been from left to right, as suggested by the Rai Bahadur we should have expected the single letter of the second line to be engraved on the left hand of the seal, where there is ample room for it. It looks as if the engraver put it as far to the right as he could.—[Ed.]

[3] See p. 210 and seal 52, Pl. CV.

always to the proviso that the direction was *not* boustrophedon). Other antiquities worth recording were a painted potsherd (VS 506) decorated with comb patterns, a small pottery jar containing a carbonized date seed, a well-modelled terra-cotta bull (VS 1346), which was picked up on the south of Room 20, and a round button-shaped ear ornament of faience (VS 1537, Pl. CLII, 8) with a lozenge device in the centre, which was secured from Room 19.

House XXIV stands immediately to the south of the house described above and measures 52 by 33 feet externally. The principal entrance, which is in the east wall, opens on a broad alley which was closed at its southern end at a later date. The inner arrangement shows a fairly large courtyard (31) in the front, with a capacious paved bath (30) in the S.E. corner, a row of fairly commodious rooms on the north and several smaller ones built upon earlier walls in the rear. One of the rooms on the north (29) is 19 feet in length and had two doorways facing the courtyard. This house contains no staircase.

The house yielded a large number of valuable antiquities, all of which, except the fragmentary steatite seal (VS 235, Pl. CVIII, 191) depicting a unicorn and a line of pictographs, were found in the lower stratum, referable probably to the Late III Period. Chief among them was a collection of thirty pottery vases, lids, and bangles, some chert scrapers and weights, and pieces of mother-of-pearl and conch-shell objects (VS 2468–96) which were found in the small room (26) in the N.W. corner of the house, 3½ to 5 feet below the surface. In Room 29 were found two small well-shaped faience vases (VS 2743), a highly glazed bangle of the same material (VS 2747 ; diameter 3½ inches) and a fine copper chisel in excellent preservation (VS 2745 ; length 3 inches). Another interesting antiquity which was recovered from this structure was a double-axe-shaped object of stone[1] (VS 256, Pl. CXXX, 35 ; length 7·4 inches, width 6·25 inches). A square boss seal of steatite (VS 955, Pl. CXV, 537), with a line of pictographs and a figure of a unicorn, was lying to the north of this building, and an oblong seal of the same material (VS 1082, Pl. CXIII, 421) with a line of well-preserved pictographs at the N.E. corner.

Stone for grinding out dishes.

Pottery kiln.

The small circular structure with a projecting mouth (Pl. LVIII, *b*) on one side in the closed lane to the east of the building described above appears, as stated in connection with a similar structure uncovered in House VII in Section B of the HR Area, to have been a pottery kiln. It is circular in shape with a diameter of 6 feet and differs in this respect from the one in the HR Area which has an oval plan. The surrounding wall, which like that of its analogue in the HR Area consists of a single course of bricks, is now standing to a height of 1 ft. 9 in. A square tablet of copper (VS 1182) was found a little distance to the north of this structure.

Houses built on foundations of other structure.

Houses XXV and XXVI are built on the foundations of a large structure of the Intermediate I Period, of which only the back or west wall has been exposed. House XXV faces towards the south and like No. XXIV has an open courtyard (47) in the front, the rest of the interior being occupied by three rooms with an open passage and staircase in the N.E. corner, a row of chambers along the west side, and two or three others between them. A second staircase with the usual small chamber beneath it, which may have done duty as a privy, occurs in the S.E. corner of the courtyard.[2] High rectangular niches are observable in the walls of some of the rooms. Of the minor antiquities found in this house the most interesting was a fragmentary square boss seal (VS 1753, Pl. CXII, 381) with a line of pictographs and the figure of a complex, composite monster with human head, horns and

Seal showing human-headed monster with animal limbs.

[1] Used by stone workers for grinding the interiors of circular dishes, etc. Cf. p. 369 *infra*.—[Ed.]

[2] The doorways shown in the plan in Room 46 and on the south side of Room 44 are doubtful. On the walls of Room 37, which are standing to a height of about 9 feet, are patches of clay plaster half-burnt to terra-cotta.—[Ed.]

ears of a bull, trunk and tusks of an elephant, neck and forelegs of a goat, and the hind part with legs and claws of a tiger. It was found in Room 39. Other noteworthy objects were a copper spear-head (VS 1800), a slate palette (?) (VS 1853, Pl. CXXX, 31), an oval pottery vase with broad mouth (VS 2672), a ring stand of the same material (VS 2675, Pl. LXXXIII, 59), which must have supported a jar with a round or pointed base, and a grinding stone (VS 1925, Pl. CXXX, 16).

House XXVI is a smaller structure, which appears to be older than its neighbour to the north, and opens into a narrow alley on the east. There is no courtyard and the light must have been admitted into the rooms by a narrow open corridor running down the middle of the house and dividing it into two well-defined halves. The southern portion consists of four rooms and the other of seven, three of which at the back could only have been used for stores, etc.[1] The house was remodelled at a later date when the original doorways were bricked up to support the upper walls and some of the rooms provided with new partition walls. Midway in the corridor lay two broken earthenware jars, one above the other, and to the east a small brick-lined reservoir with a drain, which ran out of the house through the entrance on the east and ultimately emptied itself into Lane 2. The upper one of the two jars referred to is smaller than the lower and of the size and shape of the modern *ghara*. It was filled with earth. The lower jar contained, besides layers of clay, two oval vases of the same material, two jars with pointed bases, a terra-cotta bangle, an animal figurine and some human bones.[2] Other pottery vessels were secured from the earlier stratum but hardly any from the later restored structure. Other antiquities discovered in the house that deserve notice were a fragmentary square boss seal (VS 1573, Pl. CIV, 27), with an incomplete line of pictographs and figure of a unicorn, from Room 60, another broken seal of the same type and material and with the same device (VS 1819, Pl. CVI, 85), a square yellow faience seal depicting a *svastika* (VS 1960, Pl. CXIV, 513) from Room 61, an oblong copper tablet, with an elephant on one side and a line of pictographs on the other (VS 2028, Pl. CXVII, 11), a shallow copper lamp with a flat protruding lip (VS 1637), a flat-bottomed pottery beaker (VS 1509), and a painted potsherd adorned with chequers and foliage (VS 1596, Pl. XCII, 9).

House remodelled at later date.

The open space between Houses XXV and XXVI yielded five large and two small jars, one of which (VS 2303) contained an object of lead, convex on one side and inlaid in the centre with a faience disc and a necking of tiny beads.

House XXVII (Pl. LVIII, *c*).—I have assigned this number to the site of a large building or buildings lying between Houses XXV and XXVI on the one side and Lane 5 on the other. It covers a space of 112 feet from north to south by 67 feet wide from east to west, and includes a number of rooms disposed about a spacious open court. The rooms on the north, east, and south sides are in a much ruined condition, but the seven rooms on the west side are solidly built and standing to a fair height. They are all 10 feet wide internally save for the small chamber (66) at the N.W. angle, and one of them (72) must have been more than 24 feet in length. Some of the doorways by which they communicated one with the other or with the central courtyard and the lane on the west are well preserved and relatively broad. Strips of brick pavements are found in Rooms 68 and 69, and outlets for water in others.

This building belongs to the Intermediate III Period and, as the southern portion of its central court was devoid of structural remains, a trial trench, 30 feet long by 17 feet wide (marked DD1 in the plan), was sunk to examine the earlier strata lying underneath. The excavation soon revealed the existence of a deep infilling of sun-dried brick laid in regular

[1] These rooms appear to have been filled in solid.—[Ed.]

[2] Cf. p. 87.

courses, which continued as far as 21 feet below the surface of the courtyard, where water was reached rendering further digging impossible. It was, however, evident that the virgin soil lay deeper down, as two or three objects were found at the depth of 18 feet. These were a terra-cotta figure of an animal (VS 3162), a cone of the same material (VS 3164), and a molar tooth (VS 3163).

Artistic figure of humpless bull.

A large number of other antiquities were found on the floor level of the building. Those found in the courtyard included an interesting terra-cotta figure of a humpless bull of great artistic merit (VS 1539, Pl. XCVII, 23) and in good preservation save for the legs, which was lying to the south of the deep trench referred to, a well-made bearded head of a man (VS 838) which was lying in front of Room 70, an ivory rod inscribed with a line of four pictographs (VS 875, Pl. CXIV, 532), which was found close to the same spot, a fragmentary square boss seal of steatite (VS 1558, Pl. CVIII, 175), on which a line of pictographs and upper part of the unicorn device remain, discovered at the northern end of the courtyard. Room 62 yielded a square boss seal of steatite (VS 823, Pl. CIII, 3) with a line of pictographs and a unicorn, and the small room (66) a large collection of pottery vessels (VS 3174, Pl. LXXX, 41, 44, and 52) including several goblets with pointed bases, small and large vases of different shapes and sizes, lids, cups, dishes, a wheel, the tapering stem of a bowl of the kind believed to have been censers, etc. Charred bones were found sticking in some of these vessels.[1] An ivory rod with pictographs (VS 958, Pl. CXIV, 533), similar to VS 875, Pl. CXIV, 532 noticed above, but with cross-hatched ends, was recovered from Room 69, and a small pottery vase with a spout (VS 3211) from Room 72. It may be noted that spouted jars are extremely rare both at Harappā and Mohenjo-daro.

Charred bones found in vessels.

Spouted jars rare.

Example of fractional burial (?).

Lastly, mention should be made of a large collection of pottery vessels (VS 791, Pl. LXXIX, 18 ; LXXXI, 23 ; LXXXII, 35) which was found lying pell-mell on the floor of the courtyard in front of Rooms 69 to 71 (Pl. LX, *b*).[2] The find included a large vase of fine technique, a plate 7½ inches in diameter, several small vases, one of which has two holes in the rim for suspension, the stem of a so-called offering-dish or censer, and several basketfuls of potsherds, some beautifully polished, others decorated with incised patterns. There was also what appeared to be part of the shell of a tortoise, 1 foot in length by 6 inches in width.

Shell of tortoise.

Brick-lined, paved cesspit with funerary deposit (?).

A much larger and more interesting collection of pottery vessels (VS 720, Pl. LXXXI, 27 and 39) than the one unearthed in the courtyard of House XXVII was found tightly packed in a small brick-lined and paved cesspit at the southern end of Lane 5. The cesspit, which stands in front of the stepped entrance to Room 72 in the house referred to, is 3 ft. 9 in. long by 2 ft. 9 in. wide and was no doubt originally meant to receive the waste water from the well near by.[3] The better preserved typical specimens comprised two oval vases with narrow pointed bases, four vases with rounded bodies and low flat feet, seven smaller ones of the same type, five beakers, five jars with pointed bases, a small bulbous-bodied vase with narrow mouth and flat bottom, a tall jug-shaped vase with flat bottom, a plate, a *kamaṇḍalu*-shaped vase, a pedestalled cup, a reel-shaped ring-stand, and sixty-eight rings with straight sides to support vases, etc. The cesspit also yielded some terra-cotta animals, including a dog and a bird, two beads, a piece of copper, some pieces of chert, and a basketful of human bones.

Another find of great interest was made in Lane 5, a few feet to the north of the cesspit

[1] Cf. p. 83. There can be little doubt that this and the two following groups of pottery, etc., were funerary deposits.—[ED.]

[2] Cf. p 83.

[3] This cesspit had of course long since ceased to be used as such, when the funerary vessels and other objects were deposited in it. See p. 83.—[ED.]

mentioned above. It consisted of two large pottery jars (VS 127; diameter 2 ft. 6 in. and 1 ft. 6 in. respectively) which had been badly crushed by the weight of débris above them.[1] The smaller one contained an earthenware vase, a miniature beaker with flat bottom, a fragment of an unbaked clay tablet, a fragmentary terra-cotta dog, part of a so-called censer, several terra-cotta bangles, several bones, pieces of charcoal, and a copper nail. The contents of the other jar included eleven complete vases of small size, several lids to match, eight terra-cotta figurines of rams, dogs, a cow, and a goat, pieces of wheels of the same material, two terra-cotta balls and figurines of men and women, broken beads, two chert flakes, a mother-of-pearl shell, human bones, charcoal, and a valuable sealing of yellow faience (VS 210, Pl. CXVI, 29). As will be seen from the line drawing in Pl. CXVIII, 11, this sealing is an oblong piece with a devotional scene on the front and a pictographic legend partly defaced on the reverse. The scene on the obverse depicts a male deity seated on a couch or throne in the manner of an Indian *yogī*. The posture of the legs is, however, different from that ordinarily prescribed for the various well-known *āsanas* in which the *yogī* sits for his religious meditation. For instead of being crossed, so that the feet rest on opposite thighs, here the legs are laid flat on the throne with the soles of the feet touching each other. The hands are damaged, but they appear to have rested on the knees. On either side of the central figure is a kneeling votary with arms stretched out in supplication towards the central figure and with his head sheltered by the upraised hood of a snake.[2] The other face exhibits a pictographic legend. The purpose of these jars with their very varied contents is not altogether clear, but the presence of human bones points to their being funerary urns. Similar jars with smaller vessels, terra-cotta toys, etc., were found at my excavations at Harappā.[3]

Sealing of yellow faience showing male deity on couch.

Funerary urns.

In the same lane (Lane 5) to the east of House XXXII were lying several animal bones.

Block 5

Block 5 comprised the partial remains, so far exposed, of two or three buildings (XXVIII, XXIX, and XXX) bordering the south side of Lane 2 and Houses XXII, XXIV, and XXVI above described. They, however, yielded several valuable antiquities.

House XXVIII is of the Late II or III Period.

House XXIX is of the same period as No. XXVIII. In this building a line of rooms adjoining the lane on the north has been more or less completely cleared. A button-shaped ear-ornament of faience (VS 63, Pl. CLII, 14) adorned with a lozenge-shaped pattern enclosed in a circle and the rope pattern round the edge was found in Room 6, and a square boss seal of steatite (VS 59, Pl. CX, 315) with a line of pictographs and a well-engraved short-horned bull feeding at a trough, in Room 8. One of the signs at one end of the legend resembles a man carrying baskets suspended from a pole over his shoulders. The entrance way between Rooms 7 and 9 yielded a large cylindrical pottery vessel with a flat bottom (VS 206, Pl. LXXXIII, 3), which was standing on the floor below the level of the lowest step of the staircase. It contained a large oval jar and fragments of smaller ones.

House XXX.—So far as exposed, this house consists of an open courtyard (13) along the north wall with some eight rooms on the remaining three sides. The main entrance appears to have been on the north side, but no traces of it have survived. A find of much interest and dating from the Late II or III Period was made in the narrow room (11), 5 feet below the surface. It consisted of seven copper axes or celts and three dishes of the same

Copper axes and dishes.

[1] See p. 87.

[2] See *supra*, p. 68, for a further reference to this sealing.—[Ed.]

[3] See *supra*, p. 87.—[Ed.]

material corroded and stuck together (VS 1450), which weighed 13½ lb. before cleaning (Pl. CXXXVIII, 1–3, 5, and 6, and Pl. CXXXIX, 1–4). The axes are of two types, viz. a short and broad type with a nearly semi-circular cutting edge and a longer and narrower variety with the cutting edge but slightly rounded. The length varies from 6½ inches to 9½ inches, the sides are straight or splayed, and there are no projections or holes for hafting. It is difficult to say if they were made by casting or hammering; perhaps both methods were employed, that is, the edges were hammered out after the plain blades had been cast.

Similar axes found elsewhere.

Copper axes of this kind have been found at several places in northern India and one collection of them which was unearthed in 1870 at Gungeria in the Bālāghāt district of the Central Provinces, exhibits a striking resemblance with those found at Mohenjo-daro.[1] The dishes found with the axes under notice are 3½ inches in diameter.

Block 6

Here two fragmentary structures of mouldering bricks and of the Late Period (XXXI[2] and XXXII) and a portion of an earlier one to the north have so far been disclosed. The former stands some 8 feet above the level of Lane 5.

In *House XXXI* only two small rooms have survived. The front room has, in the north wall, an outlet of channelled bricks like those noticed in the privies in House XLIX in HR Area, Section B, which fell into a pottery jar fixed in the floor of the lane dividing this structure from No. XXXII. The well in Room 1, which has a fine-jointed brick pavement around it, was cleared out to the water level. It was sunk originally in the Early or Intermediate Period, and the square parapet wall at its top was added when the later structure was erected on the site.

House XXXII, of the Late III Period, comprises a small open court (6), four small chambers on the east, and two on each of the north and south sides. There is also a small bath between Rooms 4 and 5.

The four rooms (12 to 15) to the north of the house just noticed belonged to a solidly built structure contemporary with the large building (XXVII) across the lane. The well-paved room (13) provided with a drain was a bath. At the S.W. corner, on either side of a drain, were lying two large store jars (VS 207), one of which contained smaller pottery vessels of sorts.

Block 7

In the large rectangular space to the west of Lane 4 and north of Lane 3, one large structure has been exposed at the east end and a compact group of five smaller ones at the other end. The intervening space has so far revealed no structural remains.

House XXXIII, which was entered by one or possibly two doorways from Lane 4, where the skeletons described above were found, appears originally to have embraced a space of some 65 feet in length from north to south by some 58 feet from east to west. The N.E. and S.W. corners are, however, much ruined, and it is difficult to decide if the northern portion formed part of this house. If it did, the whole of the original building on this site must be assigned to the Intermediate Period, to which Rooms 6 to 8 are to be

[1] Cf. pp. 35 and 493 ff.

[2] The northern part of XXXI appears to be of Late III Period. The walls (much deeper down) on the south are of Intermediate III or possibly II.—[Ed.]

attributed.[1] The southern portion comprising Rooms 1 to 5 is badly built. Room 4 contains a well with a drain to carry off waste water and the one to the north of Room 5 is a bath with a separate drain of its own. An architectural feature worth recording is the style of construction of the south outer wall, whose facing consists of courses of bricks laid flat, alternating with others laid on edge. The minor antiquities included a small square boss seal of steatite (VS 1666, Pl. CVIII, 157) found 3 ft. 6 in. below the surface in Room 2, an oblong bar of copper (VS 2109), and a finger-ring of the same material (VS 2417). The excavation inside Room 7 (DDIV) was deepened and revealed the fact that its walls, which are standing to a total height of 22 feet, were rebuilt twice. The lower portions belong to the Intermediate Period and the upper portions which are distinguished by their relative thinness to the Late Period.[2] The doorways of both periods are in the north wall, one above the other, the later threshold being some 10 feet above its predecessor. A large number of minor antiquities were found in this room, which are useful for chronological classification. They included a terra-cotta ram's head with well-made incised horns (VS 2667, Pl. XCVII, 4) and six triangular plaques of the same material (VS 2668), found 4 ft. 5 in. below the surface; two painted potsherds (VS 3038) and two pottery vases of small size (VS 3040), 14 feet below the surface; four painted potsherds (VS 3113), two triangular clay plaques (VS 3115, 3116) three terra-cotta bangles (VS 3008), five other fragments of painted pottery (VS 3097), and two pieces of perforated pottery (VS 3099), found 15 feet below the surface; several painted potsherds (VS 3050 and 3052) including two of a polychrome vase, three clay plaques of a triangular shape (VS 3153) and a square boss seal of steatite (VS 3154, Pl. CVII, 137) which came to light 18 feet below the surface. A part of the seal is broken off and the extant portion has a line of three pictographs and a unicorn, of which the head is missing. One foot below this level were lying three triangular clay plaques (VS 3178), and two small pottery vases with rims (VS 3179); and 20 ft. 4 in. below the surface, a corroded copper nail broken in two pieces (VS 3208).

Peculiar construction of wall.

Walls twice rebuilt.

Stratification of minor antiquities.

The five houses, XXXIV to XXXVIII,[3] were served by a side alley which led away northward from Lane 3 opposite the N.W. corner of House XXVII. The southern end of this lane was blocked up at a later date, but the northern section continued in use and is distinguished in the plan by a long stretch of a covered drain to the west of House XXXVI. These buildings were originally erected in the Intermediate Period, but much altered and added to at a subsequent date. They were also only partially explored in 1924–5, so that it is possible to give only a general idea of their arrangement, etc.

Houses of Intermediate Period

House XXXIV appears to have comprised a row of rooms along Lane 3. Only one of these rooms (10) with a narrow alley (9) to the north has so far been exposed. A thick copper slab, part of a blade-axe (VS 3185, Pl. CXXXIX, 9; length 6·2 inches, thickness 0·45 in.), was found in this room.

House XXXV measures 47 feet north to south by 27 feet east to west. In the Intermediate Period it was entered from the lane on the west but the doorway was bricked up at a later date owing to the rise in the level of the interior. The existing plan shows two fair-sized rooms on the south, two others on the north, and a courtyard with a staircase in the middle. The staircase, which is 3 feet wide, is much ruined.

[1] As it now stands, the northern part of this house is earlier than the rest. It comprises three clear strata, viz.:—Intermediate I from surface to depth of 3 or 4 feet; Intermediate II to 9 or 10 feet, and Intermediate III to 21 feet.—[Ed.]

[2] See, however, preceding note.—[Ed.]

[3] The author's division of these remains into five small houses is far from convincing. It seems more likely that they constituted one large house, undivided by any supposed lane.—[Ed.]

House XXXVI.—Only the west outer wall has been exposed over a length of some 53 feet. The position of its entrance is, however, definitely indicated by a well-built covered drain which has been traced for a considerable distance towards the north.

House XXXVII.—This structure and its neighbour to the south (XXXVIII) also faced towards the lane referred to. To judge from some deep digging undertaken in this lane, the outer walls of these buildings will be found to be standing to considerable heights. At present we only see their later restorations. The only noteworthy feature of No. XXXVII is a covered drain which runs in an oblique line across the eastern portion of the courtyard. The four or five rooms to the north are only 4½ feet wide. There is nothing of interest to be recorded about House XXXVIII.

Large earthenware vase.

Lane 3 to the south of Block 7 is exceedingly narrow in the portion adjoining House XXXIII, where it is only some 2 feet wide. At the western end it is broader. It is rendered interesting by the discovery in it of a particularly large and shapely earthenware vase (VS 1080), which was lying on its side to the south of House XXXIV. The vase was broken into many pieces but has been completely restored. It is 2 ft. 6 in. high, has a narrow mouth, broad bulging body, and a pointed base.

Horned male figure.

Lane 2 also yielded several valuable antiquities, chief among which are eight seals, a copper spear-head, and two copper statuettes in the round (VS 1575, Pl. CLIX, 11 and 12), one of which is 1⅝ inches high and appears to represent a dancing-girl. The other (height 2¼ inches) is a horned male figure.[1] These figures were lying 5 ft. 6 in. below the surface between Houses XV and XXII. The seals include a square boss seal of steatite (VS 349, Pl. CIV, 39) depicting a line of pictographs and a figure of a unicorn, a similar seal (VS 1673, Pl. CIX, 238) with the upper part broken off, five other seals of the same type, material, etc. (VS 1779, Pl. CVI, 104 ; 1799, Pl. CIV, 19 ; 1961, Pl. CVIII, 148 ; 2262, Pl. CIX, 225 ; 2372, Pl. CVIII, 172, and a rectangular seal (VS 2100, Pl. CXIII, 465) with, as usual with this class, a line of pictographs only.

[1] This little statuette was stolen from the museum at Mohenjo-daro by a party of visitors, before there was even time to clean it.—[Ed.]

Chapter XV

DK AREA

PROVISIONALLY, the buildings of the DK Area, which was excavated by Mr. K. N. Dikshit, have been divided into three periods, which can be distinguished more or less clearly one from another by the quality of the masonry. Throughout this chapter these periods and the strata corresponding with them will be termed Late, Intermediate, and Early.

The Late or uppermost stratum consists mainly of buildings whose masonry is vastly inferior to that of the Intermediate; and in the quality of its masonry this in turn is inferior to the Early. Thus, as far as our experience goes, the buildings of the lowest levels are the best; there was a steady degradation in the art of building as the levels of the mounds rose.[1]

Section A (Pls. LXV, LXVI, and LXVII, *b*)

Block 1

Chambers 1, 2, and 3 in Block 1 seem to have formed one large room in the Intermediate Period, though they were separate in earlier days, and no entrance is now to be seen. The two chambers to the east (Nos. 4 and 5) have as yet been only partially cleared.

During the Intermediate and probably also in the Early Period, the buildings in Section A were divided into two groups by a fairly wide street running from east to west and then diverging in a north-westerly direction (Pl. LXVII, *b*). And here, as in most of the streets and lanes of Mohenjo-daro, a well-constructed drain of the Intermediate Period received channels from the houses on either side. The slope of this drain is towards the east and the average height of its cover is 4·5 feet below datum.[2] The walling on either side of this street is of considerable height, especially on the southern side, where it still stands as much as 11 feet above the drain. The top of the wall on the northern side of the street is about 1 foot lower, and on both sides the walls diminish in height to east and west.

Block 2 (Pl. LXVI, *a*)

The most interesting feature of this block is Chamber 3, which is fairly well preserved and carefully paved with bricks measuring 10 by 5·25 inches laid flatwise. An exceptionally **Paving and well.**

[1] As stated by Mr. Mackay, the co-ordination of these strata with the Late, Intermediate, and Early strata in other parts of the site is provisional only. My own impression is that several of the buildings designated "Intermediate" in this chapter will eventually prove to be of the Late III Period.—[Ed.]

[2] The highest part of the steening of a well situated in Section C, Block 11 (see Pl. LXII), has been selected as the datum level for the whole of the DK Area. This datum level is 162·7 feet above mean sea-level.

small but very carefully built well in the N.E. corner of the room is only 1 ft. 10 in. in diameter.[1] The wedge-shaped bricks of which this well is constructed are 10 inches long by 2·25 inches thick, with one end 3 inches wide and the other 4·5 inches wide. At a distance of 10 inches from the inner edge of the well there is a circular edging of bricks laid on edge lengthwise; these are shaped with the inner surface slightly concave and the outer surface convex, so as to produce as regular a circle as possible. The top of this edging is about 4 inches above the coping. The wall to the east of this well now stands 2 ft. 1 in. above the paving of the room, which is about 3 inches above the top of the well and slopes towards its S.E. corner. The top of the well, the pavement, and the walls around belong to the Late Period.

Mud-filling. What little remains of Chambers 8 and 9 consists chiefly of stretches of pavement,[2] made of bricks laid on edge. This paving has settled badly in places; it was laid on a mud-filling, with which here, as elsewhere, the spaces between walls of the Intermediate and Early Periods were filled in to make a substantial foundation for walls above. The walls of these rooms, which, like the pavement, were of the Late Period, have disappeared on the north and N.W. sides, and we do not, therefore, know their actual dimensions.

Chamber 2 (Pl. LXVI, *a*) was a large and clearly an important apartment, 12 feet wide and over 25 feet long. Its walls are fairly well preserved, except to the west and north-west, where they have nearly disappeared. The eastern wall of the chamber, its best preserved portion, now stands 3·6 feet high. The floor here, also, was made of bricks laid on a mud-filling with their axes running parallel with the length of the chamber. Owing to subsidence the level of the floor is slightly irregular.[3]

Dimensions of bricks. On close examination it is evident that the bricks used for the walls and floor of Chamber 2 were taken from various earlier buildings in the mound. Two sizes, measuring 11 by 5 by 2·25 inches and 10 by 5 by 2·5 inches, respectively, were used in quite haphazard manner. Both walls and paving belong to the Late Period.

To the south of Chamber 2 are the remains of another, 28 feet long and considerably wider. Only a very small portion of its southern wall now stands—to a height of a little over 3 ft. 6 in. Its pavement has entirely disappeared; only the mud-filling on which it rested remains.

Chambers 4, 5, and 6 may once have been a long passage which was subdivided, but so much brick has been removed that the arrangement here is not at all clear. Most of the walls at the east and west of this passage are of the Late Period resting on masonry of Intermediate date.

The walls of Chamber 10 are entirely of the Intermediate Period, but remains of a pavement of Late date rest upon the top of a filling.[4]

Removal of mud-brick filling. Room 7 was more deeply excavated by Mr. Dikshit, to find what lay beneath the overlying pavement of the Late Period. The mud-brick filling was removed to a depth of 8 feet and a complete chamber cleared with a blocked-up doorway in its N.W. corner. This chamber is, of course, of the Intermediate Period and if its filling had been entirely removed, walling of a still earlier date would doubtless have been found beneath. At one time a pavement of the Late Period overlay this chamber and traces of walling of this period still remain on its eastern and southern sides.

To the east of this portion of the site, the mound slopes steeply down, with the result that only walling of the Intermediate Period is left with remains of a still earlier date beneath.

[1] The coping is 8·1 feet above datum.
[2] Averaging 8·3 feet above datum.
[3] The floor averages 7·6 feet above datum.
[4] The level of the paving is 8·3 feet above datum.

Block 3

Masonry of Intermediate Period.

The buildings on the northern side of the street need further examination, though enough has been cleared for the size of their chambers and the thickness of their walls to indicate that they were of considerable importance. All the walls here are of the Intermediate Period with the exception of fragments of pavement and some isolated patches of masonry of the Late Period, which will have to be removed to allow of this region being further explored.

From here the mound slopes gradually to the north and, as the masonry of later date thins out, we find well-defined chambers with doorways complete. And here such details as the raising of the level of a doorway in Chamber 6 show us that the Intermediate Period was of fairly long duration. The lower sill of this doorway is 2 feet below the one above it and one of its jambs stands over 12 feet high.

Block 4 (Pl. LXVI, *b*)

Doorways of Intermediate date.

Room 3 in Block 4 has two well-preserved doorways in the northern and western walls, with their sills at the same level[1] and their jambs averaging 5¼ feet high. Both these doorways and the walls of the chamber belong to the Intermediate Period. The former were blocked up in ancient days, but whether this was done in the same period or later is not known. Room 3 once led into Passage 2, which seems to have been a narrow lane. Its walls belong to the Intermediate Period, and it has been blocked up at its eastern end by a wall roughly built of bricks laid on edge, which presumably dates from the Late Period. A deep cutting shows that the southern wall of this passage, which is some 6 feet high, rests upon an earlier wall.[2]

Late Period masonry.

Chamber 4 has not yet been entirely cleared, but there is a well-preserved pavement[3] to the south of it (No. 5), which together with remnants of walls around it appears to be of the Late Period. The tops of these late walls are on the same level as the surface of this portion of the mound.[4]

Brick pier.

Farther to the north, Room 1 still awaits the removal of its mud-filling, but that it is a chamber is proved by the remains of a rectangular pier, 3 ft. 6 in. by 2 ft. 7 in. in dimensions, whose foundations descend to a considerable depth, showing that it belongs to the original plan of the building.[5] Here the excavations end, but it is hoped to explore the structures of the Intermediate and Early Periods thoroughly when the masonry that overlies them has been removed.

Possible shrine.

It is difficult to understand the meaning of the building of Late date at the top of this little hill. Mr. Dikshit suggests that it is a shrine, which it may well be, especially if we take into consideration the fact that it was placed on an eminence which isolated it somewhat from the buildings below it. The thick, well-built walls coupled with the careful laying of the pavements of bricks placed on edge indicate that it was no ordinary building. Unfortunately, very little of it remains; for it was not protected from the elements by being overlaid by later buildings. As it is customary for shrines and temples of successive periods to be built on the same site, we may eventually find another building of the same nature but better preserved in the Intermediate level below.

[1] 7·9 feet below datum.

[2] The top of the lower wall is 10·1 feet below datum.

[3] 8·3 feet below datum.

[4] 2·1 feet below datum.

[5] The top of this pier lies 2·7 feet below datum; its foundations have not yet been reached.

SECTION B (Pls. LXII, LXVIII, and LXIX)

This section is of especial interest, as it consists almost entirely of buildings of the Late Period, some of which are in a fair state of preservation.

In other parts of Mohenjo-daro the houses of the Late Period are for the most part badly denuded, partly owing to the fact that they have lacked the protection of still later buildings superimposed upon them, and partly because of their thin walls and very inferior masonry. The discovery of a tolerably well preserved series of houses and buildings of the Late Period in the DK Area was specially welcome and helps considerably in the study of the various phases of the Indus Valley culture.

Character of masonry.

It will be noticed in the plan that most of the walls of these houses are comparatively thin. They were also badly built; so much so that some have fallen down, undoubtedly from this cause. The bricks were placed in the queerest positions, some on edge, others showing their flats; joints gape and have been left unbroken in many places. This kind of masonry illustrates the great deterioration that had taken place in the art of building since the preceding period; the difference in style of the masonry of the two periods is at once evident even to the casual eye.

Block 1

Paving and flight of steps.

At the extreme south of this section there is a small group of buildings, which appear to be the remains of one or more houses (I). Their outer walls have not been cleared, and there is comparatively little of interest about them, except for a well-paved room in the extreme N.E. corner, close to a much weathered flight of steps. The pavement of the room was made of bricks laid flatwise, and slopes slightly towards the S.E. corner.[1] At the N.E. corner of the block the walls stand some 4 feet high and there is a well-preserved doorway in the middle of the northern side.[2]

Block 2 (Pls. LXVIII and LXIX, *a* and *b*)

Hypocaust (?).

This block of buildings possesses several features not met with in other parts of Mohenjo-daro. In the S.E. corner there is a most interesting apartment (No. 1), an irregularly shaped room subdivided by four walls in such a way as to leave three long narrow aisles, each 2 ft. 3½ in. wide, and a shorter cross-aisle, 1 ft. 10 in. wide, in the middle (Pl. LXIX, *b*). The average height of these four walls is roughly 4 feet. A single band of bricks laid on edge forms a dado-line about 4 feet high around the room, the thickness of these bricks forming a kind of shelf[3] at about the same height as the partition walls. And this brings us to an interesting theory.

If, as is possible, the niche in the southern wall of this chamber (it can be seen below the squatting figures in Pl. LXIX, *b*, and was loosely blocked up when found) is a flue by which heat was circulated through the aisles beneath a floor whose level corresponded with the dado-line just described, then the whole chamber may once have been a ***hammam***, or bath,

[1] 10·6 feet above datum level.

[2] Its sill is 11·7 feet above datum.

[3] This is 8·9 feet above datum.

with a hypocaust beneath—a possibility which is supported by the fact that some of the surrounding walls are decorated with ornamental masonry. In the northern and western walls of this room the bricks are arranged in one or two courses of stretchers alternating with a course of uprights, a decorative arrangement which was presumably not intended to be plastered (Pl. LXXVII, 5). The entrance to this chamber was probably from the south, where a bye-lane, not yet excavated, seems to have led to the main street on the west of the block. Its lofty southern wall is, it should be noted, of the Intermediate Period ; both this and the eastern wall were evidently re-used.

Statue. The fine steatite statue illustrated in Pl. XCVIII was found in one of the passages below the floor level. This could hardly have been the place for such an object : it probably rolled here when the walls fell in.

Block 2 is bounded on its eastern side by a long wall, which was built in sections and is of surprising thinness considering its length. On its other side the long trial trench "D" was cut to test the ground between Sections B and C, the latter of which will shortly be described. The foundations of this wall are at a depth as yet not ascertained.

Column, paving, and stairway. A curious feature of Courtyard 3 is a brick pier, 4 ft. 6 in. square, whose hollow interior was filled with rubble (Pl. LXVIII, *a*). The facing walls of this pier are but one brick thick,[1] and it is surrounded on three sides by a pavement, which has a border of bricks laid on edge. It is possible that there was once a room here whose northern and eastern walls have entirely disappeared. The wall to the south of the pavement stands about 3 ft. 6 in. high above the pavement ; and there is quite a thick wall to the west, on the other side of which are the remains of a stairway, 3 ft. 7 in. wide, with treads 8 inches wide and 7·5 inches high. A narrow landing in the middle of this stairway is a very unusual feature at Mohenjo-daro (Pl. LXVIII, *b*).[2]

Drain. From immediately north of this stairway a drain, whose channel is 8·5 inches wide and 7 inches deep and covered with bricks laid flatwise, runs westwards into the street between Blocks 2 and 3. This drain probably served to carry off water from Chambers 1 and 2.

Staircase. There is also a staircase on the eastern side of Room 5, and it is possible that, as it is so close to the stairway above described, it really belonged to the house next door. This latter stairway is now only 4 ft. 6 in. high.[3] **Ablution place.** A little ablution place in the southern portion of this room has an exceptionally well-preserved pavement sloping slightly to the N.E., made of bricks measuring 9·7 by 5 inches, laid flatwise.[4] The Late Period wall on the eastern side of this ablution place stands the highest. In its southern end there is a slit, 3 ft. 10 in. high, which may have served to carry off water.[5] The remaining walls appear to belong to the Intermediate Period.

Beam-holes. The southern end of Room 7, which has remarkably thick walls, apparently of the Intermediate Period, is blocked up by very thin and badly laid masonry. The eastern wall is exceptionally well-preserved ; in it there still remain three square beam-holes for the roof. The foundations of all the walls of this chamber are at a considerable depth and probably rest on masonry of the Early Period.[6] It is just possible that the upper courses of the eastern

[1] Its base is 11·8 feet above datum.

[2] The present top of the stairway is 12·5 feet above datum, and its landing 10·6 and base 8·3 feet above datum, respectively.

[3] The present height of its summit is 12·3 feet above datum.

[4] The lowest part of the slope is 9·5 feet above datum.

[5] Or, perhaps, as a window. Cf. p. 16.—[Ed.]

[6] The top of the eastern wall is now 13·8 feet, and the bases of its beam-holes 11·2 feet above datum.

and western walls of this chamber were added at a later date, as they are at about the same level as the adjacent brickwork of the Late Period. If so, they were added skilfully, since the walls show no traces of having been raised.

A comparatively thick wall, mainly of the Intermediate Period, upon whose northern end masonry of a later date was superimposed, separates the apartments just described from a series of rooms in the western portion of Block 2. The latter are, however, rather indefinite owing to numerous alterations and reconstructions, to say nothing of the damage done by brick-robbers.

Stairway.

A stairway (8), 4 ft. 5·5 in. wide, of which five treads, each 9·5 inches wide and 7·5 inches high, now remain, is associated with a curious square construction in the street. This latter is a later addition and was perhaps intended to keep the roadway, which, as in all eastern cities, would have risen by the accumulation of rubbish, from encroaching on the steps.[1]

A little to the east of this stairway, another flight in Chamber 9, with but four treads left, now stands only 3·35 feet high.

Buildings separated by lane.

Block 2 was apparently made up of two or more buildings separated by a drain which at one time probably lay below a narrow lane running east and west. It is unlikely that such a large and well-built drain as this would have been placed beneath the rooms of houses, where it would be difficult to remove its covering bricks to clean it. The absence, however, of thick house walls along the eastern end of the southern side of the lane has to be accounted for, as well as a total absence of walling on the northern side ; but it is quite possible that they were removed by brick-thieves. The thick street wall on the western side of the block appears to belong entirely to the Intermediate Period. The later walls that once stood upon it have now disappeared, as, indeed, have most of the walls in the interior of the block, leaving only uninteresting details such as pavements and foundations, which are far from being well-preserved.

Block 3 (Pl. LXVIII, *c* and *d*)

Important street.

The wide space between Blocks 2 and 3 has not yet been excavated, as it was used as a path for the basket-boys, but there is no doubt that it was an exceptionally wide street, averaging 29 feet in breadth.

Block 3 is on the whole well defined and is made up of the remains of four separate houses. Along its southern side there is a narrow street (No. 1), 7 feet wide, which was blocked up at its eastern end by a thin wall of the Late Period. Below this wall and separated from it by a distance of roughly 5 feet, there is a second blocking, 3 feet high, which appears to date from the Intermediate Period.

Additions to walls.

On both sides of the street the foundations of the walls are very deep. On the top of the northern wall, which is no less than 14 ft. 4 in. high and is of the Intermediate Period, was built the southern wall of the Late Period House V.[2]

The Intermediate wall stands in turn upon a still earlier wall belonging to the Early Period.[3] The arrangement of bricks in this very early masonry is unexpectedly similar to that sometimes seen in the Late Period.[4]

[1] This stairway is now 3·5 feet high and its top 11·5 feet above datum.

[2] Its foundations are at a level of 5 feet above datum.

[3] The top of this lowest wall is 9·4 feet below datum.

[4] See Pl. LXXVII, 1, 3, and 5.

The southern wall of this narrow street was also raised during the Late Period, the foundations of the Late walling being very much on the same level as those of the corresponding wall opposite to it. There are, however, no indications on the wall below of more than one period and we must, therefore, conclude that all the masonry below the foundations of the Late wall belongs to the Intermediate Period.

Battering. Mr. Dikshit found it impossible to excavate deeper in this street, as the high battered walls on either side might have collapsed through earth pressure. A total depth of 19 feet below the surface of the ground was reached, i.e., a level of 11 feet below datum.

Dimensions of bricks. The lower portions of the walls of this street belong to the Intermediate Period; they are built of bricks of different sizes, measuring 10·25 by 5 by 2·25 inches, 10·75 by 5 by 2·25 inches, and 11 by 5·5 by 2·5 inches, intermingled quite haphazard.

Kiln refuse as foundations. The southernmost house of Block 3 has very clearly defined rooms, and a stairway once led to the roof from Room 3. Only six treads remain and the stairway now stands 4 ft. 5 in. high.[1] The foundations of the walls of this house were found by Mr. Dikshit to rest on brick-kiln refuse and not directly upon the walling of the Intermediate Period below, which was met with at the average level of 2·6 feet above datum.[2]

This house was roughly built and its walls, with the exception of the one facing the main street on the east, are very thin—almost too thin, one would think, to carry a second storey, which there must have been, unless the stairway led to the roof of the house. Room 2 was remarkably long and narrow, measuring 18 ft. 1 in. by only 5 ft. 4 in. wide; the doorways into Rooms 2 and 5 still remain.[3]

Niches and buttresses. The house next door (VI) is also well preserved, but the entrance is not apparent, although the walls are fairly high (Pl. LXVIII, *c*). And to reach Room 11 it seems to have been necessary to pass through Rooms 7, 8, 9, and 10. The three niches in the western wall of the house are unusual, for their sills are at a level of 7·1 feet above datum, i.e., 2·5 feet higher than the sill of the door between Chambers 8 and 9. The walls of this house were very badly built and threaten to fall—a contingency which was evidently feared at the time of occupation, for three buttresses were built inside the house against its southern wall. The present average height of the walls of this house is 2 ft. 2 in. above the sills of the doors.

The third house in the row (VII) was very much altered and its walls are so dilapidated owing to defective foundations that its arrangement is not as clear as that of the two houses just described.

Well. What may be a fourth house, much altered and with no very noteworthy features, completes the frontage of Block 3 on the main street of this quarter. But there is ample room on the western side of the block for more houses which doubtless lie beneath the unexcavated ground on that side; Chambers 15, 16, and 17 certainly belong to yet another house (VIII). The long wall at the north of Block 3 also suggests that further houses lie on this side skirting a narrow lane (30), at the entrance of which there was a public well in a small chamber carefully paved with brick.[4] The diameter of this well is 4 ft. 1 in. and it was lined with wedge-shaped bricks, which it is impossible to measure owing to their partial destruction by salt. The original steening of the well was a little over 6 inches above the

[1] Its present top is 12·3 feet above datum.

[2] I exclude the southern wall which certainly rested on Intermediate Period masonry.

[3] The tops of the walls of this house vary between 10·2 and 11·6 feet above datum and their bases between 4·8 and 5·1 feet above datum.

[4] The pavement is at a level of 7 feet above datum.

surrounding pavement. The walls of the well-chamber are very dilapidated, and here and there they have entirely collapsed.

Foundations.

The southern wall of Lane 30 descends to a considerable depth and in places its foundations are built in sections and in the ornamental manner that is especially common in work of the Late Period. The bricks are placed on their ends, showing either their flats or edges between double courses of either headers or stretchers.

Block 4 (Pl. LXVIII, *b* and *d*)

Block 4, which is apparently made up of seven or eight houses, faces on the same street as Block 3 and on the same side of it. The opposite side of the street has yet to be excavated.

Courtyard.

The first house beyond the well (IX) is self-contained and has five rooms and a large courtyard. The latter (27) was subdivided by a partition wall built at a later date into two portions (Nos. 27 and 29). The entrance from the street must have been placed near the S.E. corner of the house, where the wall is very low.[1] Fortunately, the doors inside the house are more or less intact and we are able to see how they were arranged.

Buttressed walls.

The second house of the block (X) is about the same size, but it was so badly built that its walls had to be buttressed in several places, chiefly along the northern wall (Pl. LXVIII, *b*). A drain that formerly led from this house to a street drain was found at the level of 5·5 feet above datum. It communicated through the wall with a little washing-up place in Chamber 24.

It is possible that what are apparently the next two houses (XI and XII) were in reality one large square building. As is seen in the plan, the walls are more substantial, though again very badly built. The large courtyard (or chamber) 10 was paved with bricks laid flatwise, of which only portions still remain.[2] To the west of this courtyard are a room (No. 7) and a small bathroom, whose pavement is at practically the same level as that of the court.

Soak-pit.

There is another bathplace whose walls now stand 1 ft. 2 in. above its pavement[3] in the S.E. corner of Chamber 17; it communicates through a small aperture in its eastern wall with a soak-pit in the street outside. This soak-pit measures 2 feet by 1 ft. 4·5 in. and its sides are only half a brick in thickness. The drain enters the pit at a distance of 6 inches below the top. The corners of this house average 5 feet high from their foundations.

Shops.

A masonry bench built in the street against the eastern wall of this building suggests that its owner or tenant was a shop-keeper. To the north of the bench and at about the same level there is the base of a large jar, and to the east of it traces of a brick drain which communicates with the house by subsidiary drains.

There appear to be two small houses (XIII and XIV) at the N.E. corner of the block. The one actually on the corner seems to be self-contained, with two rooms only, and may have been used as a lock-up shop. The sill of a doorway leading to the street is well preserved.[4] But it should be noted that the thick wall that separates it from the next house (XIV) to the west is now so low at its northern end that a doorway may once have existed there.

[1] The door-sill would have been about 8 feet above datum level.
[2] The average level of this pavement is 5·8 feet above datum.
[3] 5·1 feet above datum.
[4] 5·2 feet above datum.

Bathroom and drain. At the S.E. corner of Chamber 3 (House XIII) there is a small bathroom (?) very roughly paved with bricks laid flatwise.[1] A brick-lined pit beneath its floor communicates through an aperture in the eastern wall with a soak-pit in the street and eventually with a drain. The depth of the soak-pit is 3 ft. 6 in.; its sides are but half a brick in thickness.

Dado. The house (XIV) to the west of that just described was paved throughout with bricks laid on edge.[2] On some of its walls there are the remains of a dado made by laying two courses of bricks on their longer edges showing the flats. The walls with which the largest room has been partially partitioned reach the average level of 3 ft. 3 in. above the pavement.

That the building to the west of it was an annexe to House XV is suggested by the very wide doorway between, whose jambs are well-preserved, the highest standing 2 ft. 6 in. above its sill.[3] The southern and western rooms of this house (XV) are not yet completely cleared, but it is hoped to finish them shortly.

Including their foundations [4] the walls of Block 4 average a little over 3 feet high.

Staircase. Only two rooms have been cleared in House XVI (Nos. 9 and 14), more of which must lie beneath the soil to the west. On the eastern side of Room 9 there are the remains of a staircase with three treads, each measuring 11 inches high and 5 inches wide. Room 14 has been divided into two very small compartments by means of a partition wall.

The walls of the apartments (18, 22, and 25) to the south are in a very poor condition, and it is not yet certain whether these rooms (XVII) belong to one or more houses (Pl. LXVIII, *d*).

Soil impregnated with salt. There is an unusually large percentage of salt in the soil of Section B, which has resulted in the disintegration of much of the brickwork. This is due, not so much to actual damage to the bricks themselves, as to the mud mortar that unites them becoming very friable and blowing away, thus leaving the bricks unsecured. It is, of course, possible that to this cause alone is due the present poor condition of the walls, and that we should not ascribe it to poor workmanship, though it must be acknowledged that most of the walls are very thin. The presence of so much salt can be accounted for by the foundations having been flooded—perhaps some length of time after the site was deserted.

As before remarked, nowhere else in Mohenjo-daro have we found so many well-preserved remains of the Late Period of the Indus Valley culture. Similar buildings in other parts of the city have suffered greatly from denudation, chiefly owing to their having occupied elevated positions. Section B lies at rather a low level and its buildings are in consequence better preserved, except for the ill effects of salt.[5]

Though Mr. Dikshit dug well below the foundations of these houses, he found very little masonry of the Intermediate Period, and it seems, therefore, that in this portion of the DK mound the tops of the older houses may have been demolished to provide material for the building of the new.

Sizes of houses and rooms. None of the houses of Section B can be said to be small, nor are their rooms. In this respect they compare favourably with Babylonian houses of both early and late date, whose rooms were frequently ridiculously small. It has been said that the smallness of the Babylonian rooms, coupled with the great thickness of their walls, was necessitated by the great heat of the Mesopotamian summer. If so, we might perhaps use this as an argument for contending that the climate of ancient Sind was more equable than it is now.

[1] 6·7 feet above datum.

[2] At a level of 6·2 feet above datum.

[3] Which is 5·4 feet above datum.

[4] These stand about 3·5 feet above datum.

[5] Since this was written we have found numbers of Late houses in other parts of the site.

SECTION C (Pls. LXII, LXVII, LXIX, LXX, LXXI, LXXII, and LXXIII)

The excavation of this very interesting section was also conducted by Mr. Dikshit who has supplied me with notes on his work, to which I have added many of my own observations after repeated examinations of the site.

Important street. The northern portion of Section C (Pl. LXII) is separated into groups of buildings by a street, 29 feet wide, running from east to west. Like most of the streets and lanes of Mohenjo-daro this one also is amply provided with drains and soak-pits, most of which are in an excellent state of preservation. A section is seen in Pl. LXII.

Block 1

This block, which occupies the N.W. corner of the section, belongs entirely to the Intermediate Period, with the exception of one or two Late walls of no importance. The later structures that once overlay it have been completely denuded away, and on the southern side of the block the walling of the Intermediate Period also has partly disappeared.

Room 2 is all that remains of real interest. A brick pier, measuring 3 ft. 6 in. by 3 feet, in the centre of the chamber must at one time have served to support the roof.[1]

Buttress. The sill of a doorway to the north of this pier and between it and a projecting buttress is 6·5 feet above datum. This buttress forms part of a long well-built wall, of which only the western side which has a slight batter has been cleared; this wall runs into a high unexcavated mound to the north.

At one time Room 2 was filled up with mud in order to provide a firm foundation for the now-missing Late Period building above. Some of this mud-filling has been removed so as to expose the Intermediate walls that enclosed it, but a great deal more work remains to be done here in order to examine the foundations of these walls which doubtless rest on earlier structures.[2]

The rather indefinite walling on the western side of Chamber 2 has only been partially cleared.[3]

The eastern portion of Block 1 is at present indefinite owing to a complex of walling of the Intermediate Period that rests upon earlier walls, and further excavation is necessary for this portion to be properly understood.

Block 2 (Pls. LXIX, *a*, LXX, *a* and *b*, and LXXIII, *a*)

High mound. Block 2 is bounded on the south by the wide street already mentioned and is separated by a narrow lane on the east from Block 3 (Pl. LXX, *a*; Pl. LXXIII, *a*). The northern portion of this block lies beneath a high mound which presents interesting possibilities, for, though of small extent, it is one of the highest portions of the whole DK Area.

The southern portion of Block 2 is separated by a thick wall of the Intermediate Period from the northern portion, and it seems to be a single house. At present mud-filling conceals part of these walls, and of the constructions belonging to the Late Period, which at one time overlay this house, what little now remains is sadly dilapidated.

[1] The present level of its top is 11·2 feet above datum.

[2] For comparison with other parts of the section a few levels are given. The present tops of the N.E., S.E., and S.W. corners of Room 2 are respectively 11·7, 8·6, and 8·8 feet above datum level.

[3] Its highest portion is 1·8 feet above datum.

Well-preserved doorways.

The walls of the northern portion of the block stand higher and are better preserved than elsewhere, and some of the doorways are, in consequence, still distinguishable. Rooms 8 and 9 are really one chamber which was subdivided by a cross-wall, of which all that now remains lies below a later pavement. In its N.E. corner there are the remains of a stairway, 2 ft. 7½ in. wide, which now stands 4·8 feet high with its uppermost tread at a level of 8·1 feet above datum. Each of the six treads is 11 inches high and 5·25 inches wide. The back of this stairway is shown in Pl. LXIX, *a*.

The doorway in the eastern wall is exceptionally well-preserved. It measures 3 ft. 5 in. in width and its well-built jambs still stand 4 ft. 8 in. above the unbroken sill.[1]

Wall built on cellular system.

Still further to the north there are the remains of walls which from their thickness appear to be of considerable importance. The outside of the wall, which abuts on the lane to the east, has a well-pronounced batter, and it will be noticed that it is built on the cellular system. The ground here is very high, and a little to the west is a quite lofty eminence.[2] The cellular wall runs under this and its top, where it disappears, is 7·4 feet above datum.

The drain in the narrow street between Blocks 2 and 3 also lies at a high level and must, therefore, belong to the Late Period (Pls. LXX, *a* and *b*, and LXXIII, *a*). Its channel is 7·75 inches wide by 1 ft. 4·5 in. deep and parts of its covering, of ordinary bricks laid flatwise at right angles to the drain, still remain. Its slope is towards the south.[3]

Block 3 (Pls. LXX, *a*, LXXII, *a*, and LXXIII, *a*)

This block is of considerable extent and includes walls of both Late and Intermediate Periods, of which the thicker ones are in general the earlier. Unfortunately, the thinner later walls are very badly denuded, except to the north where the terrain rises considerably. There are but few doorways left in this block and the foundations do not greatly assist us in understanding the arrangement of the buildings.

Well.

Among the chief points of interest is a small well, situated in the S.E. corner of the block, the diameter of which is 3 ft. 2 in. It is constructed of wedge-shaped bricks, 10·25 inches long by 2·75 inches thick by 5·5 inches wide at one end and 3·5 inches at the other. The interior of the well has only been excavated to a depth of about 4 feet. Though made in the Intermediate or Early Period, this well was evidently utilized in the Late Period, when a small chamber was built around it.[4]

Filling of mud and sun-dried brick.

As is so frequently the case in the DK Area and elsewhere, the ruined houses of the Intermediate Period were filled in with mud to support the buildings of the Late Period.[5] It will only be possible to examine the walls of the Intermediate Period thoroughly when this mud-filling and the walls and pavements of later date have been removed. It appears that this filling was expressly used to save the houses of the Late Period from any risk of being flooded by the Indus River. Some of this filling is of mud brick ; in other cases it has been poured in wet to make it compact and close. Once settled, a filling of this nature would not be liable to further settlement, even if its lower portion stood in water for some time every few years.

Ornamental brickwork.

In the northern wall of Chamber 8 (Pl. LXXII, *a*), which belongs to the Late Period, the bricks are laid in the curious fashion that is most commonly seen in the masonry of this

[1] The sill is 4·1 feet above datum.

[2] This reaches the level of 22·8 feet above datum.

[3] The bottom of its channel opposite Chamber 9 in Block 3 is 0·2 feet above datum.

[4] Its present top is 1·7 feet below datum.

[5] I.e., the ground level was raised by filling in the lowest storey and the upper part of the house was reconstructed.—[Ed.]

Period, i.e., courses of bricks laid on edge alternate with courses laid flatwise (Pl. LXXVII, 3). That this is not merely intended for ornament is proved by the arrangement being carried through the whole thickness of the wall (2 ft. 1 in.). The same arrangement of bricks occurs on the western side of the room.

In the N.E. corner of Room 8 a flight of steps, 1 ft. 11 in. wide, seems to have been built in what was originally a doorway. The two treads that remain are 10 inches high and 8·5 inches wide.[1]

Courtyard. No. 5 appears to have been a large open courtyard. It now has a mud-filling and its walls are so badly denuded that no doorways are to be seen. Its walls are of the Intermediate Period, overlaid in places with meagre remains of the Late Period. The indefinite masonry round about Room 10 consists of paving of the Late Period; the walls of the same period that once rested upon it are almost entirely destroyed.

Possible temple. Mr. Dikshit was at first under the impression that, as so much of Block 2 rested on platforms of mud-filling, this building must be the remains of a temple. But later he found that mud-filling exists over a very considerable area and was not confined to any particular portion of the site. Block 3 appears to me more likely to be the remains of a temple than Block 2 owing to the presence of the spacious courtyard (5). But when walls are so damaged and the doorways are missing, it is exceedingly difficult to decide whether a building is a temple or not. It is not of course to be assumed that the present day Indian temple has any resemblance to the ancient temples of the Indus Valley civilization. Indeed, it may be found that the temples of those days had a quite different design, which may be readily recognizable, when we actually come upon a temple.

Block 4

There is another narrow street between Blocks 3 and 4, the latter of which is only partially excavated. Here also the street drain belongs to the Late Period; it lies at about the same level as the drain between Blocks 2 and 3. As yet only a few walls of the Late Period have been cleared, but it is hoped to resume work here at an early date.

The Street (Pls. LXVII, *a* and LXIX, *a*)

Elaborate drainage system. The most interesting feature of the broad street that runs from east to west in the northern part of Section C is the soak-pit opposite the lane between Blocks 2 and 3. It is 5 ft. 3 in. long E.-W. by 4 feet wide N.-S. and 5 feet deep, and it is well built with walls one brick in thickness, the size of the bricks being 12 by 5·25 by 2·25 inches. The bottom of this pit was left unpaved so that the water might soak away.[2] To the north of and communicating with the soak-pit there is a long drain running along the northern side of the street, covered by two rows of bricks tilted to form a pent roof. The sides of this drain, which is 1 ft. 2·5 in. wide by 3 ft. 4 in. deep, are a single brick in thickness. There are small soak-pits at intervals along the drain to receive the water from the various buildings on the northern side of the street.

Water-chute. A soak-pit on the southern side also communicates with this main drain by means of a small channel which crosses the street at right angles (Pl. LXVII, *a*). This pit measures 3 ft. 3 in. long by 2 ft. 8·5 in. wide by 1 ft. 3 in. deep.[3] It acts as a catch-pit for a vertical

[1] The sill of the door is 1·6 feet and the top of the stairway 2·1 feet above datum.
[2] See p. 17, note 1, *supra*.
[3] Its upper edge is 1·8 feet below datum.

drain, 11·5 inches wide and with its base laid at an angle of about 45 degrees, which is built in the thickness of the wall to the south of it. The water fell from this chute into the soak-pit, into which another drain runs from the west, and the overflow ran across the street into the larger drain described above.

Trial-pit. Opposite the middle of Block 3 a deep pit was cut in the middle of the street to test the nature of the soil beneath. It was carried down to a depth of 20 feet or more, with negative results as regards the discovery of masonry; but the lower strata contained broken bricks and brick-dust which may possibly have been used as a foundation for the road, though there are no indications of these materials having been definitely laid for that purpose.

Low level of street. That this street is the lowest part of this region of the mound is shown by the levels.[1] It is, I think, certain that these two pits and the drains that connect them belong to the Late Period. On both sides of the street, however, the walls are probably of the Intermediate Period. Important walls, such as those that line a thoroughfare, are commonly raised in successive periods, and if this work be carefully done it is sometimes impossible to say where the work of one period begins and of another ends.

To the south of the street there are a number of buildings which can be divided roughly into five blocks for convenience of description.

Block 5

Large building of Intermediate date. This seems to be one large building of the Intermediate Period. The structures of the Late Period that once covered it have completely disappeared, except for a wall that divides the large courtyard in the N.W. corner of the block into Rooms 4 and 5. Unfortunately, no doorways remain and the foundations alone give us very little assistance in understanding the arrangement of the rooms.

The very stout northern wall and the somewhat thinner, but none the less important, wall on its western side are too thick for those of an ordinary house. And Room 6, which measures 26 ft. 6 in. E.–W. and 15 feet N.–S., also seems too spacious for the usual dwelling house. As walls of an earlier period lie beneath this building, we may on further excavation possibly obtain a clue as to its purpose.

Doorless compartment. The long, narrow compartment 1, which measures 13 ft. 8 in. by 3 feet wide, is difficult to understand : apparently it never had a doorway. The two sides and one end wall rest on earlier masonry which forms a footing 6 inches wide all round.[2]

Well. The only other feature of interest that now remains in Block 5 is the well belonging to the Intermediate Period in Room 3. It was cleared to below water-level, which in March, 1927, was 27 feet below the present top of the well, i.e., 21·7 feet below datum level. This well was very carefully built with wedge-shaped bricks measuring 12 inches long by 2·5 inches thick by 6 inches wide at one end and 3·75 inches wide at the other. Its diameter is 3 ft. 2 in. and the top of the steening is on the same level as the paving around it.

Soak-pit. In the street near the N.W. corner of the block a small soak-pit of the Late Period received the water from a small drain running down the middle of a narrow lane that bounds Block 5 on the western side. This lane does not seem to have existed in the Intermediate Period : beyond it are the remains of what seems to have been a house of the Late Period (Block 8) of which nothing remains but the foundations ; all the doorways have long since disappeared.

[1] The bricks which now form the top of the large soak-pit are 0·7 feet below datum, and the surface of the ground near the top of the square trial-pit is 2·4 feet below datum.

[2] The level of the highest part of its wall is 0·4 feet above datum, and the footing is 2·9 feet below that level.

Block 6 (Pl. LXXI, *a*)

Late Period structures.

Block 6, which comprises the remains of two houses, is situated at a higher level. Hence the Late Period walls are better preserved, although not all the doorways have survived. In Room 1 there are the remains of a stairway, 2 ft. 3 in. wide, set in the thickness of the wall. Its treads are 1 foot high and 6·5 inches wide, and the stairway is now 4·6 feet high.[1] The southern and eastern walls of this block appear to be entirely of the Intermediate Period, as also the short piece of walling between Chambers 2 and 4 and the greater part of the walls of Room 5.

Block 7

Block 7 appears to be a single house, but only the foundations of the walls of the Late Period now remain, and those of the Intermediate Period were similarly denuded when the later building took place. For this reason, in conjunction with the absence of doorways, the arrangement of the rooms is difficult to ascertain. The entrance must have been either from the street on the north or, more likely, from the narrow lane on the east. This house was drained by means of a vertical chute in its northern wall, measuring 1 ft. 1 in. wide and 2 ft. 7 in. deep, which communicated with a soak-pit in the street, whose dimensions are 2 ft. 5 in. by 2 ft. 2 in. by 1 ft. 8 in. deep.[2]

Water-chute.

Débris from brick-kiln used for filling.

Room 1, which is 17 ft. 8 in. long, is interesting in that, instead of there being the usual mud-filling to support the later building that once existed above, the filling was of waste material from a brick-kiln. It will be remembered that similar material was found beneath some of the walls in Section B.[3]

Economy in brickwork.

To the south of Chamber 2 there is a curious apartment of the Intermediate Period, measuring 6 feet by 3 ft. 6 in. No less than three footings can be traced on all sides except the north, each of which averages 5 inches wide. They can hardly belong to different periods, as the heights between them are so inconsiderable; they probably represent two alterations in the thickness of the wall made for economy's sake. The outside walls of Block 7 belong to the Intermediate Period. All that remains of the Late Period is the partition walls in Chamber 3 and some indefinite masonry in the interior of Chamber 2, together with the thin wall that rests on the southern wall of Chamber 1.

Block 8 (Pls. LXIX, *a*, LXXI, *b*, and LXXII, *b* and *c*)

This block is very complex and must represent a group of several houses. As most of the doorways that once gave access to the rooms are missing, it is difficult to divide the block up into its various components, especially as the walls are of much the same thickness.

This quarter was probably entered from the narrow lane along its eastern side (Pl. LXXII, *b*), though it is probable that further excavation will reveal another street to the south, which is tentatively so marked on the plan.

[1] Its uppermost tread is 9·4 feet above datum.

[2] The top of this pit lies 3·4 feet below datum level.

[3] The foundations of a later wall that rests on masonry of the Intermediate Period on the southern side of this chamber lie 0·4 feet below datum.

A carefully built well on the northern side of the block is lined with wedge-shaped bricks measuring 11 inches long by 2·25 inches thick by 5·5 inches wide at one end and 3 inches at the other. This well belongs to the Intermediate Period, but its steening was heightened in later times with bricks of ordinary shape.[1] In order to accommodate this well, a portion of an earlier wall to the east of it was incorporated into its steening, with the result that it is somewhat out of shape. The pavement surrounding it and the low thin walls in its vicinity belong to the Late Period. **Well.**

Chamber 5 (Pl. LXXI, *b*; Pl. LXXII, *d*) seems to have been of considerable importance in the Intermediate Period, as it has two rectangular piers, each 3 ft. 9 in. by 1 ft. 10 in. in section and capable of holding up a very heavy roof. These piers now stand 5 ft. 5 in. high.[2] Soon after it was built, the room seems to have been thought too large for its purpose, and it was subdivided by a partition wall, also belonging to the same period; subsequently, it was still further subdivided by walls of the Late Period, some of which still remain. **Piers.**

Another interesting feature is a small bath in the eastern part of the block (Chamber 1), whose edging of brick still remains though the walls that once surrounded it have entirely disappeared. This bath, whose pavement slopes towards the east, belongs to the Late Period.[3] **Bath.**

The thinner walls of this block are all of the Late Period; as, for example, the interior walls that make up Chambers 1, 2, 3, 9, 10, and 11. A little Late walling is scattered about Chambers 4, 5, 7, and 8, but the amount is negligible. In Chamber 14 a hoard of copper and bronze implements was found at a depth of 2 feet below the surface. The implements are illustrated in Pls. CXXXVI, 1 and 4; CXXXIX, 10 and 11; CXL, 11; CXLI, 4; and CXLII, 5.

Block 9 (Pl. LXXII, *b*)

This block is composed of several houses of the Late Period, and further excavation has yet to be done to ascertain its eastern limit. The houses here could have been entered from three sides of the block, and it is possible that there was also a lane on its eastern side. The only doorways that remain are in the little group of rooms to the south of the block, where the ground is a little higher and the walling better preserved. There are indications that earlier walls lie beneath these Late Period houses, but the later walls above do not entirely coincide with them.[4] **Late Period houses.**

South-Eastern and Southern Portions (Pls. LXII, LXXI, *a* and *b*, and LXXII *d*)

A considerable space of ground was excavated by Mr. Dikshit to the south-east and south of the blocks just described, though much still remains to be done. It should be noted that a long trench that runs westward from Block 11 was made in order to test the ground; the remains of buildings found in it are, therefore, by no means completely cleared. This ground rises appreciably from the level of the rest of Section C and we find that the doorways of the houses, most of which are of the Late Period, are more or less well preserved. **Trial trench.**

[1] Its top is now 1·1 feet below datum.

[2] Their tops reach the level of 0·55 feet below datum.

[3] Its pavement is 2·9 feet below datum. To be seen in foreground of Pl. LXXII, *b* and *c*.

[4] The average level of the foundations of these Late Period walls is 4 feet below datum. The N.W. corner of the Block is 3·1 feet below datum. The S.W. corner is 0·4 feet above datum.

Block 10 (Pls. LXII, LXXI, *a* and *b*, and LXXII, *c*)

Group of Late Period houses.

This block, which is separated from Blocks 8 and 9 to the north by a narrow lane, appears to be made up of four houses, most of which are of the Late Period, with foundations resting mainly on débris and broken brick. The houses on the southern side of the block must have been entered on the east and west, where further excavation is required; for there is no evidence of the existence of a street along their southern frontages.

Well with square coping.

The region marked 12 and 13 in the N.W. corner appears to have been originally a large apartment which was afterwards subdivided by means of partition walls. In the centre is a brick column, 2 feet square, of Intermediate date, standing only 1 ft. 4 in. high.[1] This column is engaged on both sides by a partition wall, and, judging from the good quality of the masonry, it must have been intended to support a fairly heavy roof. In the same apartment and slightly to the west of it there is a well, 3 ft. 9 in. in diameter, including the steening. It is capped by a peculiar construction, 1 ft. 9 in. square (Pl. LXXII, *d*), a feature not observed before at Mohenjo-daro.[2] This cap, which is roughly built, is 2 feet high and is Late Period work. The round portion of the well below dates from the Intermediate and perhaps also the Early Period. The bricks used for the square cap are of two sizes, 12 by 6·75 by 3·25 inches and 11·25 by 5·25 by 3 inches, a circumstance which shows that odd material was procured from elsewhere. The round part of the steening is well built, but as it is partly hidden by the capping above, the sizes of its bricks could not be ascertained.

Bricks of unusual shape.

Another well in the house, forming the N.E. corner of the block, i.e., in Chamber 3, measures 2 ft. 4 in. in diameter: it is constructed of wedge-shaped bricks of two sizes, of which the smaller measures 9·5 inches in length and 2·25 inches thick by 5·25 inches wide at one end and 3·25 inches wide at the other. The wider end of the brick is very carefully curved, a refinement not always present in wedge-shaped bricks. The larger sized brick measures 11·5 inches long by 2·25 inches thick by 6 inches wide at one end and 3·5 inches wide at the other. It is difficult to decide whether the present top of this well belongs to the Late or Intermediate Periods.[3]

Pavement.

The pavement of the adjacent room (No. 2) is exceptionally well preserved; it was constructed of specially made bricks laid flatwise. The average level of this pavement is 3·9 feet below datum and the average height of the walls that surround it 2 ft. 9 in. These levels show how very low this portion of the mound is, as compared with the other parts described.

Staircase.

In the S.W. corner of the large room (8) of the neighbouring house to the south, six treads still remain of a well-preserved staircase, 3 ft. 3 in. wide. These treads are 1 ft. 1 in. high by 6·5 inches wide, and the stairway now stands 5 ft. 9 in. high.[4] Excavation was carried considerably below the foundations of most of the walls of this room, but little walling of the Intermediate Period was found, though it is certain that there must be some below. The walls of the Late Period rested mainly on mud-filling mixed with a considerable amount of broken brick.

Chambers 7 and 8 evidently once formed one apartment, measuring 16 ft. 9 in. by 13 ft. 5 in., but it was subsequently divided up by thin partition walls.

[1] Its top is 2 feet above datum.
[2] The top of this square capping is 4·7 feet above datum.
[3] Its present coping only reaches the level of 1 foot below datum.
[4] The top tread is 3·6 feet above datum.

What seems to have been a house in the S.W. corner of the block is fairly well defined, but owing to denudation all the doorways have disappeared and what we see on the plan are merely foundation walls.

Practically the whole of this block dates from the Late Period. Towards the north, however, the later walls peter out and the group of chambers marked 1, 2, 3, 4, 5, 13, 14, and 15 consists mainly of walling of the Intermediate Period, overlaid here and there by the remains of later walls that once stood upon them.

Block 11 (Pls. LXXI, *a*, and LXXIII, *c* and *d*)

Intermediate masonry.

There seem to be four or five houses in this block dating from the Late Period, except for two thick walls, one running N.–S. and dividing the block into two portions and the other starting from this wall at its southern end and proceeding eastwards, where it forms the northern side of the street at the south of the block. Three of these houses were entered from a narrow lane running roughly N.–S. from the wide street on the south. The northern part of the block is very dilapidated, but further south there is a rise in level and the walling is much better preserved.

Unusual arrangement of bricks.

The outside of the western wall of Chamber 26 is decorated in the way that is so common in the Late Period (Pl. LXXVII, 1); in alternate courses four bricks are laid on edge showing their heads, followed by a brick laid on edge showing its face, then four more bricks showing their heads, and so on. The courses between are simple rows of stretchers.

The middle house which occupies the corner where the two streets meet is quite comprehensible. The lower parts of its outer walls belong to the Intermediate Period, and they were heightened in the Late Period to bring them into use for the new house; the additions are noticeably better and more regularly built than is usual in this period. In correctness of alignment and the careful way in which the bricks are laid, this later masonry resembles Intermediate work rather than that of the Late Period to which it undoubtedly belongs.

Annexe.

The house next door on the east appears to be a kind of annexe, for the pavement round a well (Pl. LXXIII, *b*) in Room 6 rests on the thick Intermediate wall that separates the two houses. The well is 2 ft. 9 in. in diameter and is constructed of wedge-shaped bricks measuring 10·25 inches long by 2·25 inches thick by 5 inches wide at one end, and 3·25 inches at the other. The wider end of each brick is curved.[1] This well was cleared to below water-level, which in March, 1927, was 21 ft. 10 in. below the coping.[2]

Deposit on floor round well.

The carefully laid pavement around the well slopes slightly to the S.E. corner. Its bricks, which are laid flatwise, measure 11 by 6 by 2·25 inches, and their upper surfaces are coated with a thick dark red deposit. The well and the surrounding pavement probably belong to the Intermediate Period. All the upper walls of Room 6 have disappeared with the exception of a portion on the south, which now stands some 17 inches high.

The Lane (Pl. LXXIII, *c* and *d*)

Drain made of large bricks.

The lane along the south of Block 11 is 5 ft. 10 in. wide. Throughout its length two drains run side by side, one at a slightly higher level than the other. The higher one which is on the northern side of the lane is unusually well laid; the bricks which measure 11·25 by 5·75 by 2·5 inches, an unusually large-sized brick for a drain, were evidently made especially

[1] As were the bricks of the well in Block 10, Chamber 3.

[2] This well, whose coping is 162·7 feet above mean sea-level, has been selected as the datum level for the whole of the DK Area referred to in this report.

for it. Large bricks such as these, with plane sides were doubtless necessary in order to avoid leakage as much as possible. This drain, whose sides are one brick thick, measures 8·75 inches wide by 1 ft. 2·25 in. deep, and it was covered by bricks laid either on edge or flat. It slopes to the east with a drop of 1 ft. 10 in. in 40 feet.[1]

The drain on the southern side of the lane is neither so well-built nor so well-preserved. Its channel, whose sides are only half a brick in thickness, is 6·5 inches wide by 1 foot deep. There is a difference of some 5 inches between the levels of the two drains.

Water-chutes.

On both sides of this lane the walls are quite imposing, chiefly owing to the fact that their foundations were laid bare when the surface of the lane was removed to uncover the two drains. Four water-chutes in the thickness of the wall on the northern side of the lane are of great interest. One of them is 2 ft. 2 in. wide and is very elaborate (Pls. LXXIII, *c*; LXXV, *a*; and LXXVII, 10). The remainder are simpler in construction, being merely apertures in the wall, the largest of which measures 6·5 inches in width by 3 ft. 2 in. high (Pl. LXXV, *b*). These chutes all communicate with the drain on the northern side of the lane.

The lower portions of both walls of this lane date from the Intermediate Period; they are overlaid in parts by walling of the Late Period, which is especially conspicuous on the northern side.[2]

Block 12

Denuded Late Period brickwork.

This block is mainly composed of masonry of the Intermediate Period and the thickness of the walls is noteworthy. Practically all the Late Period buildings that once stood here have been destroyed, the sole remaining evidence of their former existence being fragments of pavement here and there, and the remains of drains. This portion of the site needs further examination, for the mud-filling which was used for the foundations of the buildings of the later period has yet to be removed. The top of the highest part of the masonry of the Intermediate Period is only 0·3 feet above datum.

Block 13

This block appears to be the remains of a single large house, and its thin walls together with the style of masonry show it to date from the Late Period. This house was only partially cleared to test the ground; it is hoped to complete its excavation shortly.

Block 14

Judging from its thick walls this appears to be quite an important building. It consists mainly of Late masonry resting on walls of the Intermediate Period. On the north of the block is a group of walls of the Late Period that appear to have no substructures.

Blocks 15 *and* 16

Find of jewellery.

Both these blocks consist of later walls that rest upon masonry of the Intermediate Period, but as yet not sufficient clearance has been done to allow of a useful description being given. It was at the eastern end of Block 16 that Mr. Dikshit found a treasure trove in the shape of gold and silver ornaments hidden in a small silver vase (Pl. CXLVIII, *a* and *b*). The vase (DK 1341) lay 3 feet below the surface of the ground in Chamber 2, Block 16, which on the plan is marked by a cross in its S.W. corner. And as the walls of this room belong to the Late Period, it is clear that the vase and jewellery belong to that period too.[3]

[1] Opposite to the well in Block 11, the base of the drain is 6 feet below datum. It belongs to the Intermediate Period.

[2] The base of the Late and the top of the Intermediate Period masonry is 1·4 feet below datum.

[3] For an account of this jewellery, see Ch. XXVI.

SECTION E (Pls. LXIV and LXXIV, *a* and *b*)

Building of unusual design. Section E consists of a long narrow trial trench running E.–W., starting from the western side of the DK Area. At the western end of this trench a very curious structure was found by Mr. Dikshit. On reference to the plan, it will be seen that the most prominent feature is a large central courtyard, somewhat out of the square, which measures 60 ft. 6 in. long E.–W. by 47 ft. 4 in. wide N.–S. This court, which belongs to the Intermediate Period, is lined throughout with bricks, measuring 11·75 by 5·5 by 2·25 inches, laid on their longer edges and showing their flats. In many places four courses of this facing still remain. A recess or niche in the S.E. corner of the court measures 8 ft. 9 in. E.–W. by 5 feet N.–S.

On the northern and eastern sides of the court the brick lining is contiguous with a solid brick wall, but on the greater part of the southern and western sides there is a space, 3 ft. 6 in. wide, filled in with sun-dried brick, between the lining and the wall of the court.

Trial-shaft. In fact, the whole courtyard, when discovered, was completely filled with sun-dried brick[1]; and in order to test the depth of this filling a shaft was cut by Mr. Dikshit in the middle of the court, whereby its depth was found to be 13 ft. 4 in. There was no sign of a pavement at the bottom. This shaft can be seen in both photographs in Pl. LXXIV.

We have not yet ascertained how far the burnt brick lining of the courtyard goes down beyond the sun-dried brick filling, i.e., below floor-level; but from the thinness of this lining there is reason to think that it does not descend very far.

Wells. On the southern side of the court there is a well of the Intermediate Period, 3 ft. 9 in. in diameter, in the thickness of the wall. It has been cleared down to water-level, which at the end of March, 1927, was 22 ft. 9 in. below the coping of the well, itself 163·2 feet above mean sea-level. The steening is built of wedge-shaped bricks that measure 11·75 inches long by 2·5 inches thick by 6 inches wide at one end and 3·5 inches at the other.

Farther to the west and quite outside the court there is another well, 3 ft. 4 in. in diameter, lined with wedge-shaped bricks, which are 11·5 inches long by 2·5 inches thick by 5·5 inches wide at one end and 4·5 inches at the other. This also dates from the Intermediate Period and is built in the thickness of a wall.

Culvert. Immediately to the east of this latter well an elaborate drain runs from north to south; its channel, which measures 1 ft. 1 in. wide by 1 foot deep, runs along the bottom of a larger culvert, 3 ft. 4 in. wide, parts of whose walls still stand over 5 ft. 6 in. high. The southern end of this culvert opens into a large soak-pit, which has not yet been cleared.

Water-chute. Rather more than halfway along the culvert, northwards from the well, there is a water-chute, 11 inches wide, in the thickness of the wall on the east. The base of the chute immediately above the drain is set at an angle of 45 degrees.

This chute served to drain a series of chambers which seem to me to be of slightly later date than the masonry of the great court. As there are no signs of doorways, the walls as they now stand must be regarded as merely the foundations of chambers which have been weathered away.[2]

At the S.E. corner of the building there is yet another well, 2 ft. 10 in. in diameter, lined with bricks that measure 11 inches long by 2·5 inches thick by 5·5 inches

[1] The bricks measure 14·85 by 7·5 by 3·45 inches.

[2] It is possible, of course, that denudation has lowered the court considerably, and that these chambers were built at the same time as the court was filled up with sun-dried brick.

wide at one end and 4 inches at the other. This well, which also belongs to the Intermediate Period, was enclosed at a later period by a chamber which appears to have been entered at its N.E. corner.

There is a considerable amount of more or less well-preserved brickwork on the eastern side of the court, of which little more than the lower courses remain; unfortunately, only one doorway has survived. This brickwork I regard as dating from the Late Period. On the southern side of the court also there are a few thin walls of the Late Period.

Purpose of building.

This building appears to me to approximate more closely to our idea of a temple than any building yet excavated at Mohenjo-daro. The three wells, which are almost in a straight line, probably provided water for ablutions in the temple precincts. Not many antiquities were found within this complex beyond a few baked pottery figurines in the chambers on the south of the courtyard. It is unfortunate that so much damage has been done to this structure by weather and the depredations of brick-robbers. The only actual doorway that has survived is on the eastern side of the building.

Important buildings.

At the point M, about halfway along Trench E to the east, Mr. Dikshit partially excavated two important buildings which seem to be large houses (Pl. LXV). They are separated by a lane a little over 6 feet wide, on either side of which the walls are slightly battered. In these walls two periods can be detected, the lower masonry clearly belonging to the Intermediate Period, whereas above is brickwork of the Late Period.[1] Built up against the eastern wall of the street immediately below the masonry of the Late Period are the remains of what seems to have been a buttress. To the north of this there is a soak-pit measuring 6 ft. 8 in. long by 1 ft. 10·5 in. wide and 2 ft. 6 in. deep.[2] This pit also belongs to the Late Period; the foundations of a wall of that period are just above it.

Platforms.

Unfortunately, in both the houses only the foundations of the walls of the two periods remain, and we are, therefore, not able to determine the positions of the doorways. Like many of the buildings in the DK Area and elsewhere, these houses were built on artificial platforms. The doorways of buildings of a yet earlier period, as yet unexcavated, were blocked up, the walls raised, and the cells so formed filled in with clay, mostly in the form of unburnt brick, to make a substantial platform for a building above. This building subsequently disappeared with the exception of its high clay-filled platform, which was again built upon in the Late Period. These latest houses were in their turn destroyed to the levels of their foundations. By removing the later structures and the clay filling in the unexcavated buildings below them, we should probably find the doorways of the original houses, with which perhaps those of the Intermediate and Late Period in turn corresponded.

Judging from the thickness of its walls, House I must have been of considerable importance. Room 1 is a large apartment, but somewhat complicated by additional constructions. On its western side is a wall of the Late Period, some 18 inches thick and now about 3 ft. 6 in. high, which rests on mud-filling.[3]

The two piers in this chamber belong to the Intermediate Period. Each measures 2 ft. 11·5 in. wide by an average of 3 ft. 9·5 in. thick.[4] In the N.E. corner of the apartment is a niche measuring 4 ft. 6 in. wide and 1 ft. 5 in. deep; its sill is 6 ft. 6 in. above datum and it certainly never served as a doorway.

Jewellery contained in copper vessel.

In the N.W. corner of this chamber Mr. Dikshit found the hoard of jewellery (DK 2044, *e*) that is illustrated in Pl. CLI, *b*; it was contained in the large copper vessel

[1] The base of the upper wall on the eastern side of the street is 6·5 feet above datum.

[2] Its top is 6·5 feet above datum.

[3] Its foundations are 11·1 feet above datum.

[4] Their tops are 11·4 feet above datum.

pictured in Pl. CXLI, 12 and Pl. CXL, 18. This lay at a depth of 4 feet below the surface, and it can, therefore, be safely dated as belonging to the Late Period.[1]

Well with square coping. The well to the north of and outside this house has a square coping with an inside measurement of 33 by 33 inches. This coping is one brick thick and stands 2 ft. 3 in. high.[2] Below it, the well is round and measures 33 inches in diameter. The upper part of the rounded portion of the well was built against a wall of the Intermediate Period, with the result that it is slightly flattened on one side. It will be remembered that there is a similar square coping on the top of a well in Section C, Block 10.

House II, farther east, must also have been an important one, but it has no doorways save a blocked-up one, 3 ft. 2 in. wide, in the southern wall of Chamber 8. Possibly this particular wall was a considerable height when the ruins of the building were re-utilized. There also appears to have been a passage (No. 9), 3 ft. 2 in. in width, leading from Chamber 5 to Chamber 12 of the original building. The northern end of this passage is now blocked up; nor is any doorway from it through the northern wall of Chamber 12 now traceable.

Cells to contain mud filling. Chambers 4, 6, and 10 are now merely cells like all the rest of the rooms. Their walls average 4 ft. 7 in. high from the foundations, and the rough and uneven masonry on the inside of the walls was formerly concealed by the mud-filling.[3] The little group of walls against the northern side of this building belongs to the Late Period; they average a little over 3 feet high and their foundations stand 10·2 feet above datum.

LIST OF ANTIQUITIES

Owing to the very large number of the objects found in the DK Area, a list of the more important ones is appended below, arranged according to the Sections in which they were found. The field number of the object is given first, followed by the plate number, its depth below the surface of the ground, and lastly, the number of the room in which it was unearthed.

Section A

Block 1.

Fragment of faience vessel (A 129, Pl CLIX, 4; 3 ft.; Room 13).

Street between Blocks 2 *and* 3.

Pottery vessel (A 67, Pl. LXXXI, 13; 6 ft.).
Seal (A 274, No. 153; 2 ft.).

Block 4.

Seal (A 148, Nos. 435 and 440; 5 ft. 3 in.; Room 22).

Section B

Block 1.

Pottery animal mask (DK 2380, Pl. XCVI, 6; 3 ft; Room 2).
Portion of female figure (DK 2385, Pl. XCV, 7; 2 ft.; Room 2).
Seal (DK 2651, No. 554; 2 ft.; Room 2).
Weight (DK 3079, Pl. CXXX, 26; 1 ft. 9 in.; Room 2).
Shell cap (DK 2927, Pl. CLVI, 17; 2 ft.; Room 3).
Shell cap (DK 2899, Pl. CLVI, 17; 3 ft.; Room 3).
Shell cap (DK 2991, Pl. CLVI, 16; 1 ft. 6 in.; Room 3).
Two alabaster dishes (DK 2798, Pl. CI, 34 and 35; 3 ft.; Room 3).
Bead (DK 2999, Pl. CXLVI, 33; Room 3).
Shell cap (DK 3114, Pl. CLVI, 18; 1 ft. 6 in.; Room 5).
Seal (DK 2797, No. 325; 2 ft.; Room 8).
Seal (DK 2869, No. 355; 3 ft.; Room 10).

[1] See Chap. XXVI for a description of this jewellery.
[2] The coping is 13·84 feet above datum.
[3] The tops of these walls average 12·3 feet above datum.

Street between Blocks 1 *and* 2.

Shell inlay (DK 2558, Pl. CLV, 28; 3 ft.).
Fragment of faience plaque (DK 2562, Pl. CLVII, 37; 3 ft.).
Inscribed ivory stick (DK 2666, Pl. CXIV, 531; 4 ft.).
Fragment of faience inlay (DK 2691, Pl. CLVII, 16; 3 ft.).
Faience spindle-whorl (DK 2948, Pl. CLVII, 40; 3 ft).
Seal (DK 3054, No. 142; 1 ft 6 in.).
Shell ball (DK 3201, Pl CLIII, 5; 4 ft).
Cone-shaped weight (DK 3131, Pl. CLIV, 6; 3 ft).

Block 2.

Statue (DK 1909, Pl. XCVIII, 1–4; 4 ft. 6 in.; Room 1).
Pottery mould (DK 1924, Pl. CXXXIII, 8; 4 ft; Room 1)
Faience monkey (DK 2091, Pl. XCVI, 13; Room 1).
Seal (DK 2220, No. 87; 6 ft.; Room 1).
Seal (DK 3279, No. 140; 7 ft; Room 3).
Seal (C 3055, No. 76; 3 ft. 9 in.; Room north of No. 3)
Pottery jar (DK 2782, Pl. LXXXII, 9; 5 ft; Room 4).
Seal (DK 2340, No. 361; 4 ft. 6 in.; Room west of No 4).
Mace-head (DK 2862, Pl. CXXXIV, 28; 4 ft.; Room east of No. 5).
Seal (DK 2130, No. 75; 7 ft.; Room 6).
Knobbed jar (DK 2360, Pl. LXXVIII, 16; 6 ft; Room east of No 6).
Shell inlay (DK 3145, Pl CLV, 47; 3 ft.; Room 7).
Seal (DK 2198, No. 81; 6 ft., Room east of No. 7).
Pin-head (DK 2546, Pl CLVIII, 9; 6 ft. 6 in; Room east of No. 7).
Cover of box (DK 3002, Pl CLVII, 13; 1 ft. 6 in.; Room 9)
Pottery figure (DK 2014, Pl. XCV, 21; 4 ft.; Room 10).
Bone fish (DK 2736, Pl CXXXII, 32; 6 ft; Room 10)
Seal (DK 2484, No. 28; 3 ft. 6 in; Room 11)

Block 2.

Seal (DK 2485, No. 46; 3 ft. 6 in; Room 11).
Fragment of faience (DK 2172, Pl. CLVII, 21, 4 ft.; Room 14)
Bronze work for inlay (DK 2278, Pl CXLIII, 9; 4 ft. 6 in; Room 14).
Pottery figure (DK 2384, Pl. XCIV, 14; 2 ft.; Room 15).
Seal (DK 2732, No. 427; 4 ft; Room 15)
Pottery vessel (DK 3108, Pl. LXXX, 32; 3 ft; Room 15)
Faience gamesman (DK 2169, Pl. CLV, 19, 4 ft; Room 18).
Pottery cone (DK 3090, Pl. CXXXIV, 17; 3 ft.; outside S E. corner of Block 2).
Cog-wheel bead (DK 2546, Pl CXLV, 17; 6 ft. 6 in)
Animal mask (C 2739, Pl. XCV, 2; 4 ft.).

Street between Blocks 2 *and* 3.

Figure of rhinoceros (B 236, Pl XCVII, 8; 4 ft.).
Seal (B 290, No. 452; 3 ft.).
Seal (B 664, No. 488; 8 ft).
Flint share (B 728, Pl. CXXXI, 18; 6 ft.).
Seal (B 731, No. 483).
Seal (DK 2971, No. 145; 2 ft 6 in.).
Pottery figure (DK 3158, Pl. XCV, 30; 1 ft. 6 in.).

Block 3.

Pottery head (DK 2505, Pl. XCV, 9; 13 ft.; Street 1).
Seal (DK 3205, No. 302; 2 ft. 2 in.; Street 1)
Seal (DK 2294, No. 273; 10 ft.; Street 1).
Seal (B 434, No. 271; 5 ft.; Street 1).

Offering-stand (B 341, Pl. LXXIX, 16; 10 ft.; Room 2).
Shell inlay (?) (B 441, Pl. CLVI, 5; 4 ft.; Room 5).
Seal (DK 3069, No. 55; 5 ft.; Room 11).
Seal (B 383, No. 133; 4 ft.; Room 12).
Pottery basin (DK 2644, Pl. LXXXII, 28; 5 ft.; Room 12).
Faience inlay (DK 2730, Pls. CLV, 69, CLVII, 31; 4 ft.; Room 12).
Seal (B 588, No. 337; 8 ft. 6 in.; Room 15).
Seal (B 428, No. 552; 8 ft.; Room 16).
Seal (B 588, No. 337; 8 ft. 6 in.; Room 16).
Seal (B 594, No. 524; 13 ft.; R. 16).
Pottery animal (B 218, Pl. XCVI, 9; 9 ft.; Room 17).
Seal (B 426, No. 94; 8 ft.; Room 17).
Seal (B 426, No. 557*b*; 8 ft.; Room 17).
Seal impression (B 426, Pl. CXVI, 1, Pl. CXVIII, 7; 8 ft.; Room 17).
Seal (B 608, No. 228; 10 ft; Room 17).
Weight (DK 2255; 1 ft. 6 in.; Room 17).
Fragments of faience box-cover (DK 2256, Pl. CLVII, 15 and 38; 1 ft. 6 in.; Room 17).

Lane between Blocks 3 *and* 4.

Tall pottery jar (DK 1764, Pl. LXXXI, 12; 6 ft.).
Seal (DK 2147, No. 91; 5 ft. 6 in.).

Block 4.

Seal (DK 1398, No. 409; 3 ft.; Room 1).
Seal (DK 1522, No. 101; 3 ft.; Room west of No. 1).
Seal (DK 2055, No. 44; 1 ft. 6 in.; Street east of Room 2).
Faience gamesman (DK 2113, Pl. CLV, 14; 2 ft.; Room west of No. 2).
Seal (DK 1892, No. 155; 3 ft.; Street east of Room 3).
Faience vessel (DK 1933, Pl. CI, 8; 2 ft.; Room north of No. 4).
Shell jar stopper (DK 1602, Pl CLVI, 6; 4 ft.; Room 7).
Seal (DK 1541, No. 74; 5 ft.; Room 10).
Seal (DK 1436, No. 407; 3 ft.; Room 12).
Faience cover of box (DK 1818, Pl. CLVII, 14 and 28; 3 ft.; Room 15).
Seal (DK 2027, No. 259; 3 ft.; Room east of No. 17).
Seal impression (DK 1323, Pl. CXVI, 27; 3 ft.; Room 18).
Seal (DK 1298, No. 522; surface; Room 20).
Spherical weight (DK 1265; as Pl CXXXI, 60 and 61; 2 ft.; Room 22).

Block 4.

Seal (DK 2137, No. 339; 3 ft.; west of Block 4).

Street East of Block 4.

Spherical weight (DK 2032, Pl. CXXXI, 60 and 61; 4 ft.).
Seal (DK 3018, No. 544; 4 ft.).

Section C

Block 1.

Sample of salajit (DK 580; 2 ft. 6 in.; Space south of Room 2).
Flint core (DK 774, Pl. CXXXI, 13; 4 ft.; Space 7).
Seal (DK 797, No. 358; 6 in.; Room 10).
Seal (DK 931, No. 494; 2 ft.; north of Block).
Copper chisel (DK 896; 3 ft.; north of Block).

Block 2.

Seal (C 3201, No. 262; 4 ft.; Room 3).
Seal (C 3155, No. 150; 1 ft. 4 in.; Room 3).
Pottery jars (C 3008*a*, 3008*b*, Pl. LXXXI, 51 and 52; 4 ft.; Room west of No. 4).

Comb (C 2165, Pl. CXXXII, 21; 8 ft.; Room 5).
Handled cup (C 3156, Pl. LXXXIII, 27; 8 ft. 6 in.; Room 5).
Seal (C 3070, No. 60; 3 ft; Room 7).
Painted jar (DK 1217, Pl. LXXXIII, 12; 7 ft; Room 8).
Grey ware (DK 1218, Pl. LXXXIII, 30; 6 ft 9 in.; Room 8).
Ribbed jar (DK 1220, Pl. LXXX, 42; 7 ft.; Room 8).
Pottery jar (DK 1223, Pl. LXXXII, 8; 6 ft. 9 in.; Room 8).
Spear-head (DK 1240, Pl CXXXV, 10; 6 ft 9 in.; Room 8)
Pottery jar (DK 1242, Pl LXXXII, 1; 6 ft. 9 in.; Room 8).
Grey ware (DK 1243*a*, Pl LXXXIII, 32; 6 ft 9 in, Room 9).
Button (DK 1506, Pl. CLV, 7; 5 ft; Room 9)
Seal (DK 1542, No. 310; 8 ft.; Room 9)
Seal (DK 1543, No. 534; 8 ft.; Room 9)
Shell gamesman (DK 1554, Pl. CLIII, 30; 8 ft.; Room 9).
Seal (DK 1638, No. 439; 8 ft; Room 9).
Seal (DK 744, No. 193; 5 ft.; Room 10)
Grey ware (DK 951, Pl. LXXXIII, 29; 3 ft 6 in; Room 10).
Seal (C 3158, No 394; 6 ft 6 in; Cell in thick wall north of block)
Pottery figurine (C 3067, Pl XCV, 6; 2 ft).
Copper tablet (DK 1606, Pl CXVII, 5; 8 ft)

Street between Blocks 2 and 3.

Seal (DK 33, No 72, 1 ft. 11 in.)
Narrow-based bowl (DK 138, Pl LXXXI, 31; 1 ft 6 in.)

Block 3

Seal (C 2692, No 212; 2 ft.; Room 1).
Seal (C 290, No. 303; 5 ft; Room 3).
Seal (DK 188, No 45; 2 ft. 6 in; Court 5)
Seal (C 2582, No 321; 4 ft, Chamber in N.E. corner of Court 5).
Seal (DK 108; No 49; 1 ft 6 in, Room 11).
Seal (DK 91, No 260; 1 ft. 3 in; Well-chamber east of No 6).

Street between Blocks 3 and 5

Seal (DK 160, No 254; 5 ft; Drain on northern side of street).
Seal (DK 595, No 492; 6 ft)

Block 4.

Seal (C 2027, No. 259; 1 ft. 6 in).

Block 5.

Handled cup (C 2019, Pl LXXXIII, 21; 2 ft.; Room 4)
Seal (C 2023, No 189, 5 ft 3 in.; Room 6)
Seal (C 2823, No. 288; 4 ft; Room 6).
Shell inlay (C 2804, Pl CLV, 63; 6 ft. 6 in).

Block 6.

Faience vessel (C 3063, Pl CI, 10; 2 ft; Room 1)
Shell inlay (C 2909, Pl. CLV, 65; 3 ft.; Room 2).
Painted jar (DK 1293, Pl. LXXXIII, 9; 6 ft; Room 5)
Seal (DK 1512, No. 294; 2 ft; Room 5).
Seal (C 2803, No. 199; 2 ft. 6 in.; Room 1).

Block 7.

Seal (C 2372, No 270; 4 ft; Chamber south of Room 2).

Block 8.

Seal (DK 221, No. 147; 2 ft. 6 in.; Room 1).
Seal impression (C 2105, Pl. CXVI, 2; 2 ft.; Room 1).
Seal (C 2896, No. 386; 4 ft.; Room 1).
Agate gamesman (DK 3046, Pl. CLV, 12; 1 ft.; Room south of No. 1).
Seal (C 2024, No. 301; 5 ft. 3 in.; Room 2).
Seal (C 2072, No. 538; 4 ft.; Room 2).
Offering-stand (C 3046, Pl. LXXIX, 9; 3 ft.; Chamber S.E. of No. 4).
Bone fish (C 2164, Pl. CXXXII, 19; 8 ft.; Room 5).
Pottery wheel (DK 319, Pl. CLIII, 34; 3 ft.; Chamber north of No. 6).
Seal (DK 426, No. 350; 2 ft. 6 in.; Room 6).
Seal (DK 925, No. 196; 2 ft.; Room 6).
Seal (DK 1291, No. 466; 1 ft.; Room 7).
Seal (C 2056, No. 423; 1 ft. 9 in.; Room 9).
Seal (C 2073, No. 327; 4 ft.; Room 9).
Rattle (C 2567, Pl. CLIII, 11; 12 ft.; Room 9).
Seal (C 2077, No. 556; 5 ft. 6 in.; Room 10).
Seal (C 2394, No. 182; 6 ft. 6 in.; Room east of No. 10).
Hoard of copper and bronze implements and utensils (C 1978, Pl. CXXXVI, 1 and 4, Pl. CXXXIX, 10 and 11, Pl. CXL, 11, Pl. CXLI, 4, Pl. CXLII, 5; 2 ft.; Room 14).
Figurine (C 2895, Pl. XCV, 10; 10 ft.).

Street between Blocks 8 *and* 9.

Cross-shaped ornament (DK 1695, Pl. CXLIII, 23; 2 ft.).

Block 9.

Bronze needle (DK 430, Pl. CXXXII, 5 and Pl. CXLIII, 36; 1 ft. 9 in.; Room 5).
Seal (DK 315, No. 14; 3 ft.; Room 9).
Seal (DK 596, No. 108; 6 ft.; Room 9).
Seal (DK 597, No. 449; 6 ft.; Room 9).
Seal (C 3024, No. 190; 3 ft.; Room 10).
Seal (DK 209, No. 326; 1 ft. 6 in.; Room 10).
Grey ware (DK 129, Pl. LXXXIII, 37; 4 ft. 2 in.; Room 11).
Seal (DK 402, No. 37; 1 ft.; Space between Rooms 11 and 15).
Grey ware (DK 215, Pl. LXXXIII, 41; 4 ft.; Room 14).

Lane between Blocks 9 *and* 10.

Seal (C 2853, No. 344; 4 ft.).
Seal (DK 92, No. 95; 1 ft. 3 in.).

Block 10.

Seal (DK 962, No. 113; 3 ft.; Room 5).
Seal (C 1956, No. 287; 3 ft. 6 in.; Room 6).
Pottery toy (DK 1719, Pl. CLIII, 39; 4 ft.; east of Room 6).
Seal (C 2767, No. 308; Room 8).
Seal (C 3133, No. 180; 6 ft.; Space 12).
Seal (C 3202, No. 197; 2 ft. 9 in.; Space 12).
Seal (DK 844, No. 495; 2 ft.; Room 13).
Pendant (DK 947, Pl. CXLVII, 32; 2 ft.; Room 13).
Seal (DK 121, No. 539; 2 ft.; Chamber north of No. 16).
Seal (DK 1528, No. 25; 2 ft.; Room 18).
Seal (C 1893, No. 349; 2 ft. 6 in.; Room 22).
Seal (C 656, No. 450; 4 ft. 5 in.; Room east of Chamber 25).

Street between Blocks 6 *and* 10.

Seal (DK 12, No. 83; 1 ft.).

Block 11.

Seal (C 435, No. 204; 4 ft. 6 in.; Room 1).
Seal (C 606, No. 330; 4 ft. 5 in.; Room 1).
Bulla (C 2750, Pl. CXXXIII, 1; 3 ft.; Room 1).
Faience gamesman (C 46, Pl. CLIII, 41; 1 ft. 6 in.; Room 6)
Gamesman (C 79, Pl. CLV, 24; 3 ft.; Room 6).
Seal (C 51, No. 391; 1 ft. 6 in.; Room east of No. 6).
Bobbin-shaped pottery bead (C 109, Pl. CXLVI, 46; 4 ft.; Room east of No. 6).
Copper pan (DK 1621, Pl. CXL, 10, Pl. CXLII, 10; 1 ft; Room 25).
Seal (C 1814, No. 398; 9 ft.; Room east of No. 25).
Flint burnisher (C 1853, Pl. CXXX, 36; 3 ft 9 in.; Room east of No. 25).
Seal (C 554, No. 437; 3 ft. 2 in.; Room 27).
Pottery figurine (DK 485, Pl. XCV, 5; 1 ft 9 in; Court north of Room 27).
Seal (C 1878, No. 467; 3 ft. 6 in.; Court north of Room 27).
Seal (C 1287, No. 486; 1 ft 6 in; Room 29).
Seal (C 1895, No. 9; 2 ft.; N E. corner of block)
Seal (C 2766, No. 282; 5 ft. 2 in; chamber west of Room 26).

Street between Blocks 11 *and* 12.

Seal (C 40, No. 485; 2 ft).
Seal (C 204, No. 456; 5 ft. 6 in.).
Seal (C 206, No. 165; 5 ft. 6 in.)
Grey ware (C 278, Pl. LXXXIII, 28; 6 ft).
Seal (C 427, No. 351; 5 ft.).
Seal (C 310, No. 359; 6 ft.).
Handled cup (C 1352, Pl. LXXXIII, 13; 9 ft.).
Seal (C 2053, No. 371; 10 ft.)

Block 12.

Offering-stand (DK 1863, Pl. LXXIX, 22; 6 ft.; Room 4).
Seal (C 1863, No. 274; 5 ft; Room 4).
Seal (C 217, No. 418; 3 ft; south of Room 5).
Seal (C 675, No. 368; 4 ft.; Room 6).
Seal (C 181, No. 34; 2 ft. 6 in; Room 8).
Seal (C 2768, No. 77; 7 ft.; Room 8).
Pottery grating (C 160, Pl CXXXI, 43; 4 ft; Room 8).
Bronze and copper objects (C 95, Pl. CXL, 7, Pl CXLI, 3, Pl CXLIII, 15 and 16; 4 ft.; Room 9).
Group of bronze objects and vessels (C 100–1, Pl. CXXXVII, 7, Pl. CXXXVIII, 8, Pl. CXL, 6, 13, and 20, Pl. CXLI, 1, 2, and 10, Pl. CXLIV, 1; 5 ft; Room 9).
Seal (C 162, No. 268; 3 ft. 6 in.; Room 10)
Seal (C 329, No. 136; 3 ft. 6 in; Room 11)
Seal (C 353, No. 369; 4 ft. 6 in.; Room 11).
Broken faience vessel (C 364, Pl. CI, 5; 4 ft; Room 11).
Seal (C 810, No. 169; 7 ft.; Room 11).
Barrel-shaped weight (C 315; 6 ft.; Room 14).
Pottery sealing (C 696, Pl. CXVI, 7; 8 ft.; Room 14).
Pottery elephant (C 676, Pl. XCVI, 10; 7 ft.; Block 12).

Block 13.

Seal (DK 681, No. 328; 2 ft. 3 in.; north of Block 13).

Block 14.

Pottery figurine (DK 1380, Pl XCV, 18; 3 ft; Room 3).
Seal (DK 1519, No. 219; 5 ft; Complex north of Room 8).

Space between Blocks 14 *and* 15.

Pottery grating (DK 1462, Pl. CXXXI, 46; 3 ft.).

Block 15.

Pottery jar (DK 1887, Pl. LXXXI, 11; 5 ft.; Room 4).

Block 16.

Silver vase (DK 1341, Pl. CXL, 1, Pl. CXLVIII, *b*; 3 ft.; Room 2).
Jade bead (DK 1341, Pl. CXLV, 34; 3 ft.; Room 2).
Head of moveable toy (DK 2183, Pl. CLIII, 39; 3 ft.; north of Room 3).

Block 16.

Die (DK 1200, Pl. CLIII, 8; 5 ft.; Room 4).
Bronze work for inlay (DK 2279, Pl. CXLIII, 10; 7 ft.; Room 4).
Die (DK 2362, Pl. CLIII, 10; 1 ft.; Room 4).
Seal (DK 2363, No. 499; 5 ft.; Room 4).
Pig's head (DK 2153, Pl. XCVI, 21; 2 ft.; Room 9).
Pendant (DK 2154, Pl. CXLVII, 31; 2 ft.; Room 9).
Head of figure (DK 2189, Pl. XCV, 8; 7 ft.; Room 12).
Shell inlay (DK 2219, Pl. CLV, 44 and 55; 2 ft.; Room 14).

Section D

Trial Trench D.

Seal (D 21, No. 68; 1 ft.).
Seal (D 90, No. 289; 6 ft.).
Seal (D 114, No. 415; 5 ft.).
Seal (D 150, No. 416; 1 ft. 6 in.).
Seal (D 187, No. 40; 3 ft. 6 in.).
Seal (D 207, No. 424; 5 ft. 3 in.).
Seal (D 208, No. 540; 5 ft.).
Seal (D 234, No. 500; 2 ft. 9 in.).
Seal (D 262, No 403; 3 ft.).
Seal (D 263, No. 474; 4 ft.).
Storage jar (D 287, Pl. LXXXV, 6; 4 ft.).
Seal (D 288, No. 411; 4 ft. 6 in.).
Seal (D 289, No. 205; 4 ft. 3 in.).
Seal (D 316, No. 122; 4 ft. 6 in.).
Seal (D 349, No. 519; 2 ft. 9 in.).
Pottery rasp (D 368, Pl. CXXXIII, 13; 10 ft.).
Handled cup (D 383, Pl. LXXXIII, 20; 1 ft. 6 in.).
Seal (D 392, No. 353; 3 ft.).
Seal (D 417, No. 360; 3 ft.).
Anvil (?) (D 457, Pl. CXXX, 24; 5 ft. 6 in.; west end of trench).
Pottery jar (D 458, Pl. LXXXI, 32; 5 ft. 6 in.; west end of trench).
Seal (D 552, No. 132; 3 ft. 9 in.).
Bronze chisel (D 603, Pl. CXXXV, 15; 4 ft.; west end of Trench D).
Seal (D 619, No. 233; 3 ft.).
Offering-stand (D 622, Pl. LXXIX, 20; 3 ft.; west end of Trench D).

Section E

House I, Trench E.

Group of copper and bronze utensils, etc. (E 2044–5, Pl. CXL, 4, 5, 9, 12, and 18, Pl. CXLI, 5, 6, and 12, Pl. CXLII, 1, 2, 3, and 7; 4 ft.; Room 1).
Seal (E 1585, No. 79; 3 ft.; Room north of No. 1).

Seal (E 1829, No. 281; 3 ft.; Room 2).
Seal (E 296, No. 107; 7 ft.; Room 5).
Seal (E 1912, No. 198; 6 ft.; Room 7, group of walls north of House I).

Street between Houses I and II.

Flint core (E 80; 4 ft.).
Seal (E 2039, No. 412; 2 ft.).
Seal (E 1886, No. 383; 3 ft.).
Seal (E 2528, No. 498; 7 ft.).

House II, Trench E.

Seal (E 300, No. 290; 6 ft.; Room 1).
Seal (E 348, No. 290; 7 ft.; Room 1).
Copper vessel (E 190, Pl. CXL, 19; Pl. CXLII, 4; 2 ft 6 in.; Room 6).
Copper bowl (E 189, Pl. CXLII, 12; 3 ft. 6 in.; Room 6).
Bronze flask (E 190, Pl. CXL, 16; Pl. CXLII, 6; 2 ft. 6 in.; Room 6).
Seal (E 1908, No. 527; 5 ft.; Room 6).
Seal (E 2006, No. 185; 2 ft. 6 in.; Space east of Room 6).
Seal (E 1809, No 160; 9 ft; Room 8).
Seal (E 2053, No. 170; 5 ft. 6 in.; Room 11).
Seal (E 2484, No. 265; 5 ft.; Room 11).
Seal (E 2484*a*, No. 125; 5 ft; Room 11).
Seal (E 1846, No. 336; Space east of House II)

Walls West of House I.

Seal (E 1989, No. 515; 1 ft. 6 in; Room 2).

Building at Western End of Trench E.

Seal (E 2094, No. 267; 2 ft; western side of court).
Seal (E 2217, No. 187, 6 ft.; southern side of court).
Seal (E 2475, No. 429; 9 ft; southern side of court).
Seal (E 2548, No 112; S.E. corner of building)
Seal (E 2401, No. 59, 7 ft.; drain on western side of building).

Various Portions of Trial Trench E.

Seal (E 96, No 176; 2 ft.)
Seal (E 187, No. 229; 4 ft 6 in.).
Bronze vessel (E 188, Pl CXL, 8 and Pl. CXLI, 9; 2 ft)
Seal (E 230, No. 109; 1 ft. 3 in.).
Seal impression (E 232, Pl CXVI, 6; 5 ft).
Seal (E 250, No. 277; 1 ft.)
Seal (E 268, No. 261; 5 ft 6 in).
Seal (E 297, No. 235; 6 ft. 6 in.).
Painted jar (E 413, Pl. LXXXIII, 11; 3 ft. 6 in).
Pottery sealing (E 444, Pl CXVI, 30; 3 ft.).
Seal (E 470, No. 115; 3 ft).
Seal (E 491, No. 159; 4 ft 6 in.).
Seal (E 492, No. 526; 3 ft 6 in.).
Pottery mask (E 517, Pl XCV, 3; 15 ft.).
Bone fish (E 628, Pl. CXXXII, 20; 6 ft.).
Figure of ram (E 634, Pl. XCVII, 7; 6 ft.).
Seal (E 653, No. 220; 3 ft).
Storage jar (E 671, Pl LXXXV, 7; 2 ft. 6 in.).
Seal (E 829, No. 98; 3 ft.).
Seal (E 845, No. 146; 2 ft. 9 in.).
Seal (E 894, No. 491; 2 ft. 3 in.).

Seal (E 904, No. 475; 3 ft.).
Pottery mask (E 958, Pl. XCV, 1; 7 ft. 6 in.).
Pottery mould (E 964, Pl. CXXXIII, 7; 9 ft.).
Seal (E 976, No. 296; 7 ft.).
Seal (E 1007, No. 480; 4 ft.).
Seal (E 1008, No. 186; 3 ft.).
Seal (E 1094, No. 129; 1 ft.).
Seal (E 1095, No. 438; 1 ft.).
Seal (E 1154, No. 215; 2 ft.).
Seal (E 1181, No. 347; 4 ft.).
Pottery sealing (E 1260, Pl. CXVI, 21).
Seal (E 1261, No. 525).
Seal (E 1277, No. 377; 5 ft.).
Seal (E 1345, No. 78; 5 ft. 6 in.).
Seal (E 1346, No. 334; 5 ft. 6 in.).
Pin-head (E 1348, Pl. CLVIII, 13; 3 ft. 2 in.).
Seal (E 1432, No. 384; 1 ft. 2 in.).
Seal impression (E 1449, Pl. CXVI, 19; 10 ft.).
Paste sealing (E 1450, Pl. CXVI, 9; 10 ft.).
Faience sealing (E 1451, Pl. CXVI, 24; 10 ft.).
Pottery sealing (E 1517, Pl. CXVI, 23; 10 ft.).
Seal (E 1521, No. 178; 4 ft.).
Seal (E 1651, No. 362).
Seal (E 1723, No. 512).
Copper tablet (E 2215; 3 ft.).
Seal impression (E 2500, Pl. CXVI, 20; 2 ft.).
Seal (E 2505, No. 408; 2 ft.).
Seal (E 2767, No. 134).

Section F

Trial Trench.

Seal (F 30, No. 484; 4 ft.).
Seal (F 47, No. 546; 1 ft. 6 in.).

CHAPTER XVI

ARCHITECTURE AND MASONRY

Dating by sizes of bricks.

IT has been found impossible as yet to determine the date of any particular period on the Mohenjo-daro site by the size of the bricks employed. Even in the same wall the bricks vary considerably in size; for instance, in the piers of the great hall in L Area three sizes are found: 11 by 5·5 by 2·75 inches; 10·5 by 5·5 by 2·5 inches; and 11·75 by 5·25 by 2·5 inches. Further complications are introduced by bricks from earlier buildings being re-used in the Intermediate and Late Periods. Well-burnt bricks, and those of Mohenjo-daro are of excellent quality, are practically indestructible and can be used over and over again, provided that a moderate amount of care is taken in removing them from the old walls. Although, however, the sizes of the bricks tell us nothing, and it is practically impossible to distinguish between the brickwork of the Early and Intermediate Periods, the brickwork of the Late Period is as a rule quite unmistakable. Owing to carelessness in laying, broken perpends are common, and horizontal as well as vertical joints are frequently an inch wide. In the interiors of the thicker walls the bricks are often laid anyhow between faces of more careful work. It is evident that the bricklayer's art deteriorated remarkably in the Late Period, but for what reason it is difficult to say with certainty.

Inferior masonry in Late Period.

Inaccurate lay-out.

The majority of the rooms and buildings at Mohenjo-daro are out of truth in the Late Period, and this feature is noticeable in even the largest buildings. This is at variance with the accuracy of the more important ancient buildings of Sumer, where attempts were successfully made to obtain a proper degree of squareness.[1] I purposely compare Mohenjo-daro with some of the sites in Mesopotamia because of their proximity and also because definite connections between the two have been established.

It is true that these connections, some of which are very close, show trade relations at least with Mesopotamia, but there are great differences in the architecture of the two countries.

Absence of wall decoration.

The chief one is the general lack of any decoration in the buildings of Mohenjo-daro, such as ornamental buttresses or stepped recessing.[2] The walls of Mohenjo-daro are severely plain, and the interior of the buildings shows the same lack of decoration as the outside, even in the more important buildings. With but one or two exceptions no attempt seems to have been made to plaster the walls, and they were left just bare brick.[3] Mr. Hargreaves, in his excavation of a portion of HR Area, found that in certain walls in

[1] See, however, Mr. Mackay's remarks on the Great Bath, p. 131 *supra*.—[ED.]

[2] It is to be noted, however, that there are many examples of recessed panelling of interior walls, such as that illustrated in Pl. LXIII, *a*.—[ED.]

[3] Such patches of plaster as have been preserved (there are others besides those quoted by Mr. Mackay) are of clay and they have only been preserved because the clay was converted into terra-cotta by accidental fires. Clay plaster not so burnt would have been dissipated by moisture. Precisely the same phenomenon is observable in the Buddhist monasteries of Taxila. It is likely, therefore, that the use of clay was wider than Mr. Mackay's observation implies. See *supra*, p. 18.—[ED.]

House 8 the bricks were laid in gypsum plaster, instead of the usual mud.[1] Passage 17 of House 3, Block 2, of the HR Area, was found in some places to have been coated with a reddish coloured plaster. Again, in Room 5 of House 8, Block 3, of the HR Area, remains of mud plaster were found which had apparently been burnt red. On this coating traces were found of a wash of a whitish colour in several layers.

As far as was possible, the houses and other buildings of Mohenjo-daro and Harappā were aligned with the streets, which ran almost due north and south, east and west. The main buildings are all fairly correctly orientated with their sides towards the cardinal points, as was the case with the buildings of ancient Egypt. At Mohenjo-daro the prevalent winds are from the north and south, and the main streets may have been orientated in accordance with this fact. In Mesopotamia, on the other hand, the corners of the earlier sacred buildings were orientated to the cardinal points; and the same was true of most of the ordinary houses also.[2] This orientation of the temples was probably fixed by the requirements of religion; and the houses and smaller buildings merely conformed to the rule in order to accommodate themselves to the positions of the larger buildings, which probably always occupied the same site, though repeatedly repaired and enlarged.

True arch unknown.

In both ancient Babylonia and Egypt the true arch was known in very early times, but at Mohenjo-daro the corbelled arch alone was used.[3] It is certain, I think, that, had there been a really close connection between Sumer and the Indus Valley, the principle of the true arch would have been readily appreciated in the latter, especially as the people of Mohenjo-daro were familiar with the making of wedge-shaped bricks. In Mesopotamia this form of brick was also known and used in building columns.

Absence of round column.

We do not find the round column at either Mohenjo-daro or Harappā. When columns were required, which was but rarely, they were always made either square or rectangular in section.[4] The round column was well known in Sumer, and several examples were found in the "A" palace at Kish, where, moreover, they were built of specially made voussoir-shaped bricks. Similar columns have been found at Telloh in Mesopotamia and also in Elam.[5]

That the people of Mohenjo-daro were quite as capable as the early Sumerians of constructing round columns is implied by the fact that they constantly made wedge-shaped bricks for their wells and other circular constructions.

Rarity of column.

A possible reason for the rarity of the column at Mohenjo-daro, whether square or rectangular, was the ample supply of tall timber which permitted considerable spans to be

[1] Since Mr. Mackay wrote this I have had a further examination of a large number of structures made by the Assistant Archæological Chemist. In every case it has been found that gypsum mortar was used in conjunction with mud.—[Ed.] The gypsum is a greyish, translucent substance quite unlike the opaque white plaster-like mortar found in Sumer and Egypt.

[2] Koldewey denies this. The evidence seems clear, however, that the larger buildings in Sumer were oriented with their corners towards the cardinal points. The orientation of an ancient town depended in a great measure on the orientation of the sacred buildings within or adjacent to it. *Excavations at Babylon*, p. 243.

[3] The true arch and the corbelled arch are frequently found together in Mesopotamia. The latter form of arching was especially favoured for tombs, even down to comparatively late times. Both corbelled and true arches were known in Sumer as early as 3100 B.C. *Antiquaries' Journal*, vol. viii, No. 4, p. 434.

[4] The square ones range in size from 17 to 54 inches; the rectangular ones are also of various sizes: 45 by 22 inches; 60 by 40 inches; 72 by 42 inches.

[5] *Mém. Dél. en Perse*, t. vii, p. 49, fig. 71. Though round columns were employed in Sumerian architecture at a very early date, and even made of sun-dried brick, for some reason not yet explained they do not seem to have been popular in the late periods. No round columns have yet been found at Babylon of earlier date than the Greek and Parthian periods. Koldewey, *Excavations at Babylon*, p. 216. Woolley has now found well-built mud brick columns dating from the Third Dynasty of Ur. *Antiquaries' Journal*, vol. x, pl. xxxvi, *b*.

covered without extra support. In Sumer, on the other hand, timber was always scarce, and the palm was perhaps considered too valuable as a food-producer to be much used for building purposes. It was perhaps the palm-tree itself that gave the idea of the round column in Babylonia and other countries, for owing to the symmetry of its trunk this tree makes a very neat column.[1] It is also likely that in ancient days the date-palm was as rare in Sind[2] and the Panjab[3] as it is to-day.

Limestone capitals. That wood was sometimes used for columns seems to be proved by the finding of four limestone capitals with a number of stone rings in Section B, Block 2, House 5, Room 49 of the HR Area. Three of these capitals are illustrated in Pl. CXXX, 21, 22, and 23.[4]

The first of these (HR 5939) stands 6·5 inches high. It has a vertical hole in its base, 2 inches in diameter and about 3·5 inches deep. At right angles to this a dowel-hole 0·5 in. in diameter runs through the base of the capital.

No. 23 (HR 5935) is a similar object of about the same size but slightly better finished. Like the first, it has a rounded top and flat base, 6·9 inches in diameter; its dowel-hole is rather larger (0·55 in.) and better cut.

No. 22 in Pl. CXXX (HR 5934) is an entirely different type of capital. Two specimens of these were found, but as one was badly weathered the more perfect one alone is illustrated. This measures 5·6 inches high and has a flat base and top, the former being 9 inches square and the latter 12·5 inches square. The base of the capital has carefully trimmed edges but towards the middle the work is rougher, showing that this part was intended to be hidden, either on another stone or by the top of the column, which was, likely enough, tenoned to fit the hole in the stone; a vertical and well-drilled hole, measuring 4·5 inches in diameter, passed right through it. Traces of red ochre are visible on its surface.

The second example (HR 4963) is 7·25 inches high but the same size in other respects. Its vertical hole is 3 inches in diameter and has been bored from both ends, leaving a slight ridge in the middle.

From the comparatively small sizes of the holes in these three limestone capitals it appears likely that they were intended to be set on wooden columns. If this be so, a tenon must have been cut at the top of the column so that a part, at least, if not the whole of the base of the capital was properly supported.

The columns that formerly supported the two larger capitals might well have been square in section. That they were not built of brick seems proved by the size of the base of the capitals (9 inches square).

Shape of brick. Another great difference between the architecture of early Sumer and that of ancient Sind lies in the shape of the brick. In the former country, at the period with which we are dealing, it was of a shape known as plano-convex, i.e., it was rectangular and thin, with a flat base and sides and highly rounded upper surface. It was only sometime after the Sargonic period that the ordinary rectangular brick came into common use.[5] No trace has been found at Mohenjo-daro of a plano-convex brick, and there is no reason to think that it was ever used there. On the other hand, even at the lowest levels, we find well-made bricks, which would be a credit to a modern brickmaker. Their general size is 11 by 5·5 by 2·5 inches, which

[1] It appears to me not improbable that the mosaic columns found at Al 'Ubaid are conventionalized copies of palm-trunks. *Antiquaries' Journal*, vol. iv, pl. xli.

[2] It is only grown in gardens.

[3] Only in the Bahāwalpur State.

[4] I do not share Mr. Mackay's view that Nos. 21 and 23 were capitals. The shape of their tops seems conclusively against it. See *supra*, p. 60, note 2.—[Ed.]

[5] A rectangular brick, however, was exclusively used at Jemdet Nasr.

by a coincidence is very nearly the size of brick used by Kurigalzu of the Kassite Dynasty of Babylonia (1600 B.C.) and of those used at Ur in the third dynasty of that place.

The general style of architecture differs greatly in the two countries. There is no building at Mohenjo-daro that can definitely be said to have been used for sacred purposes, whereas in Babylonia a building of this type, even if but moderately preserved, is readily recognized. On the other hand, one might not expect similarity in their sacred buildings, unless the religion of the two countries were very much the same, and of this there is at present no evidence whatever.

There is also a dissimilarity between the private houses of Babylonia and those of Ancient Sind. In both countries an open court is the basic feature in house planning, but at Mohenjo-daro the rooms are larger and less frequently arranged on the four sides of the central court.[1]

Artificial platforms. The custom of erecting buildings upon artificial platforms to avoid their being flooded is common to the two countries, as also is the method of using a filling between brick foundations for this purpose. In early Babylonia, however, river clay rather than ordinary earth was used. In Sind, the filling appears sometimes to have been poured in wet, but in most cases the filling is composed of unbaked brick, whereas in early Sumer the clay was thrown in, in lumps just as it was extracted from the river bed (Pls. LVIII, *c*; LXXIV, *a* and *b*).[2] In both countries the foundation walls that held the filling were usually thicker than the walls above, so that a well-defined footing was left around the inside of each chamber.

Batter. The use of a batter for the outer faces of important walls is common at Mohenjo-daro, but is unknown in early Babylonia, though it is found later in that country.[3] It is also, as is well known, a prominent feature of most of the buildings of Egypt.

Flooding. For some reason which seems connected with abnormal floods, many of the later houses were built upon platforms formed by filling up the rooms of the earlier houses beneath with unbaked brick, clay, or sometimes with refuse from brick-kilns. This use of the older walls obviated the building of a special platform ; all that was needed was a filling. I am inclined to think that owing to flooding many of the houses at Mohenjo-daro fell because of the subsidence of the soil, and that, when this happened, a repetition was avoided by special attention to the foundations. Many of the houses—some of them poorly built—in Section B of the DK Area (Pl. LXII) are not built on platforms, and they show marked evidence of subsidence ; moreover, the exceptionally high proportion of salt[4] in the soil in their vicinity provides further evidence of their having been flooded.

Climate. There may have been great differences between the climates of Babylonia and Sind in those very early days. That of the former country may be assumed to have been very much what it is now, namely, a dry summer and about 5 inches of rain in the winter. In that part of Sind where Mohenjo-daro is situated the conditions are now very similar, but there is good reason to suppose that in ancient days the rainfall was considerably heavier.[5] Many of the seals, as pointed out in a previous chapter, show forest-loving animals, whereas the early Sumerian seals invariably show animals typical of a semi-arid country. Granted,

[1] *Antiquaries' Journal*, Oct., 1927, No. 4, pl. xlii.

[2] This was markedly the case at Kish. *Sumerian Palace and "A" Cemetery*, Field Museum, Chicago, p. 110.

[3] This may later be subject to correction. I base the statement on my own excavations in Mesopotamia. It appears that some of the later buildings in Mesopotamia have walls that lean inwards, for instance the ziggurat at Ur. Woolley, *The Sumerians*, p. 142.

[4] Sodium sulphate.

[5] The questions of rainfall and climate are discussed more fully in Chapter I.

then, that this inference is correct, it is evident that the heavier rainfall may have necessitated the very elaborate drainage system which will be described towards the end of this chapter.

Use of burnt brick.

Besides the types of animals that are shown on the seals and the elaborate drainage system, there are two more facts that point to a larger rainfall in ancient times. The first is that all the houses and buildings are of burnt brick. We have yet to find, even in the poorest quarters, buildings of sun-dried bricks. In Sind at the present day sun-dried bricks are used for some of the largest buildings, not solely for the reason that this material is more economical, but because experience has shown that sun-dried brick makes a considerably cooler building than burnt brick. When it is essential to build with burnt brick it is a common plan to line the walls inside with unburnt brick to keep out the heat. For this reason alone, it is permissible to argue that the climate of ancient Sind was cooler and, therefore, probably wetter than it is at the present day.[1]

Thresholds.

A second point is that the thresholds of many of the houses are considerably higher than the street level; in some cases a short flight of steps and a small platform lead into the houses. From this we may infer that the streets were liable to flooding and the doorways of the houses had, therefore, to be protected.

Brick manufacture.

Bricks.—The bricks of Mohenjo-daro are all exceptionally well made, yet have no straw or other binding material. They are always rectangular in shape with the exception of those that were made for special purposes, such as the wedge-shaped bricks almost invariably employed in the construction of wells. The bricks were made in an open mould and struck along the top with a piece of wood, as proved by their striated upper surfaces. The bases of the bricks are invariably rough, showing that they were made and dried on dusty ground, which is borne out by the frequent presence of potsherds and bits of charcoal adhering to their bases. No bricks have been found that were made on matting.

Brick clay.

The clay that was used seems to have been ordinary alluvial soil, like that which is found in the vicinity of Mohenjo-daro to-day, and is used by the modern brickmaker and potter. It is only necessary to dig down a few feet below the surface soil, which is impregnated with salt, to obtain clay of the right consistency.

In one case—whether accidental or not, it is difficult to say—a brick was found which was made of a mixture of clay with a large proportion of small pieces of broken brick, which form dark red patches, the whole effect being that of breccia.

The bricks are exceptionally well baked and range from straw-colour to bright red. No attempt was made to grade them by their colour. We do not yet know the type of kiln in which these bricks were baked, but then, as now, there was evidently no difficulty about fuel. Wood must always have been far more plentiful than in Babylonia, where reeds were the only available fuel.

None of the bricks have grooves or depressions for frogging purposes. In two cases, however, bricks of usual size were found to be marked on their upper surface, one (L 374) with a cross extending from corner to corner and the other (L 373) with a longitudinal groove. In Mesopotamia it is still uncertain whether the plano-convex and other forms of brick were marked for the purpose of frogging or to identify them as the work of their maker. And here it is equally impossible to say why these two bricks were so marked without at least pulling down the walls in which they were found.

As in all brickyards of the modern East, the bricks were laid over large areas for the preliminary drying. The result is that we have found the footprints upon them of cattle,

[1] The temperature now ranges from below freezing-point in winter to 125 degrees F. in summer. A temperature of 118 degrees in July is quite common.

crows, dogs (very common), and in one case of a large cat-like animal which may have been a leopard.

The largest brick yet found at Mohenjo-daro measures 20·25 by 10·5 by 3·5 inches. It is the only one of its size and was in a wall of the Late Period in the SD Area. It was probably made originally to cover a drain and was re-utilized in the Late Period.

Another brick of large size measures 14·5 by 7·25 by 4 inches. This size of brick is fairly common, but is always found in masonry of the Late Period, never in the lower levels.

The smallest sized brick measures 9·5 by 4·35 by 2 inches, and large numbers of a slightly larger size have been found. In every case these small bricks bear evidence of having been cut down from a larger size of brick by means of a saw.[1]

Sawn bricks.

In the construction of bathrooms, sawn bricks were almost invariably used to ensure the evenness of floor which was considered essential. Ordinary bricks were probably not used for this purpose on account of the impossibility of making their joints sufficiently close. Many of these bricks are polished on one side by the bather's feet, as can be seen in many places where the bricks are still *in situ*. Sometimes the upper surfaces of bathroom bricks are coated with a dark red deposit resembling an enamel, the cause of which has yet to be determined.[2] It is certainly not a glaze, for the surface is comparatively soft.

Sizes of bricks.

I give below the various sizes of bricks that have been found and the levels and areas in which they occur :—

	Inches.		*Area.*	*Period.*
(1)	9·5 × 4·35 × 2[3]	Sawn.	Stûpa.	Late.
(2)	10·0 × 5·00 × 2·25	,,	L.	Intermediate.
(3)	10·0 × 5·00 × 2·25	,,	DK.	Early.
(4)	10·25 × 5·50 × 2·25[4]	,,	L.	Intermediate.
(5)	10·25 × 5·00 × 2·25	Moulded.	SD.	?
(6)	10·35 × 2·50 × 2·00	Sawn.	L.	Late.
(7)	11·00 × 5·25 × 2·35	Moulded.	L.	Intermediate.
(8)	11·00 × 5·50 × 2·25	,,	L.	All.
(9)	11·4 × 5·75 × 2·5[5]	,,	L.	Late.
(10)	12·00 × 6·00 × 2·25[6]	,,	L.	Late.
(11)	13·50 × 6·25 × 3·75	,,	?	?
(12)	14·00 × 6·75 × 3·75	,,	L.	Late.
(13)	14·00 × 7·00 × 3·25[7]	,,	L.	,,
(14)	14·50 × 7·25 × 4·00	,,	L.	,,
(15)	20·25 × 10·50 × 3·50[8]	,,	SD.	,,

[1] The marks referred to, however, may be due, not to a saw, but to rubbing down the surface, the usual process followed in mediaeval and modern India.—[ED.]

[2] Since found to be a mixture of lime and brickdust polished with the feet. It is possible that, as now, it was customary to oil the soles of the feet.

[3] Pl. CXXX, 12.

[4] Pl. CXXX, 19.

[5] Pl. CXXX, 20.

[6] This size of brick was found by Major Mockler in 1876 at Suktagen-dor in Makrān. The same size of brick is known at Ur in Mesopotamia and dated to about 2000 B.C.

[7] Pl. CXXX, 18.

[8] This is very much the same size of brick (19 by 10 by 3 inches) found by Sir Aurel Stein on the top of the Shāhī-tump mound, near Turbat in Southern Balūchistān. From ceramic evidence these bricks, which are sun-dried, are believed to be of an earlier date than the Nāl burials.

By far the commonest size of moulded brick is 11 by 5·5 by 2·25 inches ; it occurs at all levels. The moulded brick of small size (No. 5) is very unusual ; possibly it was made for a special purpose.

The sizes of these bricks do not fit well into any known system of measurement, with the exception of those measuring 14 by 7 by 3·25 inches. On three Egyptian cubits (21·72 inches), dated to about 1000 B.C., there is a prominent mark at the 19th digit, or 14 inches, which Professor Petrie points out must indicate the existence of such a measure.[1] The commoner size of brick, 11 by 5·5 by 2·25 inches, agrees fairly closely with the Assyrian digit of 0·73 in.

Shapes of bricks.

Some of the bricks used at Mohenjo-daro are illustrated in Pl. CXXX, 12–15 and 18–20. The L-shaped brick, No. 14, was cut from a rectangular brick. The longer limb measures 9·75 inches and the shorter 4·75 inches ; the width and depth of the limbs are both 2·1 inches. A brick (HR 1126) which is similar to the above except in having limbs of equal length was found east of House VIII, Block 3, Section A, of the HR Area, at a depth of 3 feet. Both the limbs are 9·75 inches long, 4·75 inches wide, and 4·75 inches deep. This last brick cannot have been cut from one of ordinary shape. L-shaped bricks are comparatively common at Mohenjo-daro ; they were used to avoid the necessity of using two separate pieces of brick to fill up corners in the paving of bathrooms.[2]

An interesting brick found in the VS area and measuring 10·7 by 4·9 by 2·4 inches seems to have once formed part of a gutter. One side of the brick is lowered along its axis to a depth of 0·6 in. at one end and 1·2 inches at the other, the slope being somewhat abrupt at its lower end. This left a ridge along the longer side of the brick measuring 1·8 inches wide. By placing two bricks of this kind together a very efficient runnel would be formed.

The amount of fuel that must have been used in burning the bricks used at Mohenjo-daro and other prehistoric sites of the same period must have been enormous. It argues that in the past Sind must have been a well-wooded province. We have not yet succeeded in finding any brick-kilns, but these were probably situated well outside the city area and near an ample supply of wood. It cannot be imagined that forests were available close to the doors of the people who occupied these sites, for as time went on the supplies near at hand must have failed and the populace would have had to go further afield to procure fuel for bricks and for kitchen purposes.

Bitumen.

Cement.—When burnt bricks were used for Babylonian buildings, clay or bitumen was used as mortar, the latter material being quite frequently employed in the more important buildings. It was not until a late period that lime was used, and then only exceptionally. Bitumen has up to the present been found in only one building at Mohenjo-daro, in which it served to make a tank water-tight. It has been suggested that the use of this substance implies trade with Mesopotamia, for bitumen is rare in India and common in the former country, the best known sources of supply being the wells of Hit on the Euphrates, from which place it was brought down by river to Southern Babylonia. On the other hand, though it is not impossible that the abundant wells of Hit supplied the Indus Valley with bitumen, there are possible sources much nearer at hand ; for instance, in the neighbouring Kirthar range and in the Bolān pass.

The nearest locality to Mohenjo-daro in which bitumen is known to occur in any quantity is Khaltan, about 36 miles almost due east of Sibi. The deposits here are fairly considerable and are described in the records of the *Geological Survey of India.*[3]

[1] "Weights and Measures," *Ency. Brit.*, vol. xxviii, p. 483.

[2] Compare this shape of brick with one found at Susa which came from a wall. *Mém. Dél. en Perse*, vol. i, p. 94, fig. 139 (f.).

[3] Vol. xix, pt. 4.

With plenty of limestone only 60 miles away [1] it is surprising that the people of Mohenjo-daro did not use this material for mortar. Evidently the more easily quarried gypsum rock was preferred, possibly for the reason that it was easier to burn. Gypsum rock requires a much lower temperature to calcine it than limestone.[2] In Egypt limestone was only used for mortar and plaster in Roman times; the reason why it was not employed before may have been lack of fuel.

Of the gypsum used in House 8, Block 3 of the HR Area, the following is Mr. Sana Ullah's analysis :—

	%
Gypsum	63·25
Carbonate of lime and magnesia	1·82
Sand	32·36
Alkaline salts	2·57
	100·00

The large proportion of sand in this gypsum plaster is noticeable. As Mr. Lucas remarks, "sand frequently occurs as an impurity in the raw material."[3] It must be confessed, however, that 32·36 per cent seems too high a proportion for an impurity; and there can be little doubt that it was purposely added.

Wedge-shaped bricks.

Wells.—The bricks used in the construction of wells are almost invariably wedge-shaped; in only a few cases have I seen ordinary bricks used.[4] These wedge-shaped bricks were always made in a mould and they are of many sizes (Pls. LII, *b*, LVI, *b*, LXXIII, *b*).[5]

In the following list these sizes are given in inches, together with the diameter of the wells from which they were taken :—

	Site.	*Diameter of Well.*	*Dimensions.*[6]	*Period.*
(1)	DK Area, Section C	3 ft. 9 in.	9·50 × 5·25—3·25 × 2·25 in.	Intermediate.
(2)	DK Area, Section A.	1 ft. 1 in.	10·00 × 3·00—4·50 × 2·25 in.	Late.
(3)	DK Area, Section C.	2 ft. 9 in.	10·25 × 3·25—5·00 × 2·25 in.	„
(4)	L Area.	7 ft. 5 in.	10·50 × 4·25—5·25 × 2·50 in.	„
(5)	DK Area, Section C.	3 ft. 2 in.	10·25 × 5·50—3·50 × 2·75 in.	Intermediate.
(6)	DK Area, Section E.	2 ft. 1 in.	11·00 × 4·50—5·00 × 2·50 in.	„
(7)	DK Area, Section C.	?	11·00 × 3·50—5·00 × 2·25 in.	„
(8)	DK Area, Section E.	3 ft. 4 in.	11·50 × 4·25—5·50 × 2·50 in	„
(9)	DK Area, Section C.	2 ft. 4 in.	11·50 × 3·50—6·00 × 2·25 in	„
(10)	Tank (Room 16).	6 ft. 2 in.	11·50 × 4·50—5·75 × 2·50 in.	„
(11)	L Area.	7 ft. 5 in.	11·50 × 4·75—5·50 × 3·25 in.	Late.
(12)	DK Area, Section E.	3 ft. 9 in.	11·75 × 3·50—6·00 × 2·50 in.	Intermediate.
(13)	DK Area, Section C.	3 ft. 2 in.	12·00 × 3·75—6·00 × 2·50 in.	„
(14)	DK Area, Section C.	3 ft. 9 in.	12·05 × 6·75— ? × 3·25 in.	Late.

Diameters of wells.

From the above list it will be seen that there is a considerable variation in the diameters of the wells and the sizes of the bricks used to construct them. Taking an average of the wells

[1] At Sukkur. A very good quality of cherty limestone is now quarried there.

[2] That the Indus people were acquainted with lime is proved by specimens found at Harappā, but it does not appear to have been used for mortar.—[Ed.]

[3] Lucas, *Ancient Egyptian Materials*, pp. 25 and 26.

[4] The resulting interstices between the bricks of the outer part of the steening were filled in roughly with small pieces of brick.

[5] They were sometimes used for other purposes, such as lining depressions in a pavement to hold large water-jars.

[6] The middle figures show the variation in the width.

that fall between 3 and 4 feet in diameter, we find that the 19th digit of the Egyptian cubit, or 14 inches, is a factor of it. The two wells that measure 7 ft. 5 in. in diameter might also have been set out with a unit of 14 inches, if this standard was in use.

The wider ends of the bricks in the steening of wells 3 and 9 were carefully curved so as to present a smooth surface on the outside of the well, a refinement that was very seldom practised—in fact, it was hardly necessary, as the outer wall of a well was not exposed to view. In one case only were the narrower ends of the bricks curved.

Public wells. A public well was frequently placed in a cul-de-sac between two houses. A pavement of burnt brick was laid around it, and pot-holes often show where large water-jars were stood. We can sometimes see the marks made by the drawers of the water both in the coping of the well and on the pavement where countless feet have stood in one place. In two instances brick benches were built around the wall for the use of people awaiting their turn to draw water.

Some of the wells are constructed of ordinary shaped bricks used conjointly with wedge-shaped bricks. The wedge-shaped bricks being cut to varying sizes in wells of this description suggests that they were cut on the spot by the mason instead of being moulded to a uniform size.

Dating. In the majority of cases it is difficult to determine the date of a well, as there is no doubt that the steening of some was raised as the levels of the mound rose. On the other hand, it was, of course, necessary for wells constructed in the Late Period to penetrate the earlier levels in order to reach water. We have not been able to reach the base of the steening of any of the wells on account of the water-level of the Indus Valley having risen by natural causes. When we are able to do this, we shall be able to determine the water-level at Mohenjo-daro at the period of 3000 to 2750 B.C. to within six feet or so.

Mortar. As far as I have been able to observe, mud mortar was the only cement used to bind the bricks forming the steening of the wells. In the higher parts of the well the leakage from splashing would amount to little, and towards the bottom it was an advantage for the steening to be porous.

Coping of wells. In many cases the top of the well only projected slightly above the floor of the chamber or court in which it was situated, as in Pl. XLI, *b*, and an edging of brick around it served to prevent waste water from re-entering the well. The steening of the wells, in fact, was never carried to such a height above the pavement as to prevent people from falling in. The pavement around a well frequently sloped down to a drain at one corner to allow waste water to run away.

The tops of wells were liable to displacement by the ropes rubbing against them, which owing to the depths of some of the wells could not be avoided. To prevent this, the steening was sometimes thickened at the top by the addition of a line of bricks on the outside to make a substantial coping (Pl. LI, *b*). As a rule, plain bricks were employed for this purpose, but in a house in the HR Area especially moulded bricks were used whose outer edges were carefully rounded off to give a better finish to this feature. In the majority of the wells, however, the coping was set but little above the pavement and the latter gave it the necessary support.

Windlasses. In some of the private wells the water may have been lifted by some form of windlass, since there are no marks caused by the friction of the ropes on the coping, which are clearly seen in most of the public wells. On the other hand, the private wells are generally small in diameter and water could be lifted from them by the drawer standing straddle-legged over the well. If windlasses had been used on any of the wells, these must, together with their supports, have been made of wood. The modern practice is to build the supports of either mud or brick, but no well at Mohenjo-daro has yet been found provided with such supports.

In a house situated in the DK Area part of a wall was constructed with wedge-shaped bricks similar to those that were made for wells. The bricks are so arranged that the wider end of each brick was placed alongside the narrow end of the next. Bricks of this kind are so rarely used, however, for walls, that it seems probable that the builder of the wall in question ran short of ordinary bricks and had to use what lay nearest to hand.

Decorative bricklaying.

Masonry.—In most of the walls the bricks were laid in alternate headers and stretchers, care being taken to break the joints. In the Late Period of the Indus Valley civilization, however, we often find very poor work both in the laying of the bricks and in the proper breaking of the joints. In this period we also find the curious arrangement of bricks shown in Pl. LXXVII, 1, 3, and 5, commonly employed. This method of bricklaying must have been intended to ornament the building, as, especially in the case of No. 1, there would be a tendency for some of the bricks to fall outwards. This same arrangement of the bricks is observable in a wall of the Early Period, but it has not as yet been found in the Intermediate levels. The walls of this type are invariably badly built, despite the fact that this method of laying the bricks required more care than the usual header and stretcher system (Pls. LIV, *c*; LXIX, *b*; LXXII, *a*).

No. 1 in Pl. LXXVII illustrates the masonry of the western wall of Chamber 8 in Block 3, Section C, of the DK Area, which was built of bricks measuring 10·75 by 5·25 inches. The arrangement of bricks illustrated in Pl. LXXVII, 3, was found in the northern wall of Chamber 8 in Block 3, Section C, of the DK Area. The bricks of which this wall is built measure 10·75 by 5·25 by 2·5 inches.

The method of brick-laying shown in No. 5 in the same plate is carried out in bricks measuring 10·5 by 5·25 by 2·25 inches. It is seen in the northern and western walls of Chamber 1 in House 11, Block 2, Section B, of the DK Area. These walls being one brick thick, the pattern is the same on both sides.

Closers.

In the careful masonry of the earlier periods *closers* were necessitated at one end of a wall for the proper spacing of the joints. They were made by cutting bricks in half longitudinally, and are to be found in every wall of good workmanship.

In the thicker walls of these periods we do not always find the bricks arranged in the same way in the interior as in the faces. The bricks in the thick walls forming the sides of the Great Bath are arranged in alternate courses as follows :—

(1) Header, header, header, header, header.
(2) Stretcher, header, header, header, stretcher.

Rubble filling in walls.

In very thick walls, indeed, bricks were sometimes economized by using a filling of clay or even rubble between the faces. Provided that the faces were thick enough, this method of building was calculated to stand the test of time.

Walls not generally bonded.

It was the usual procedure for the builder first to make the rooms as large as possible. He then subdivided them into smaller rooms by means of partition walls, which being later additions were but seldom bonded with the walls of the original chamber. That the partition walls were not planned beforehand and were merely afterthoughts, is proved by the fact that their foundations are seldom on the same level as those of the main walls.[1] Most of these partition walls are of a considerable thickness and should not be confused with the thinner walls that were obviously built at a later date.

[1] It does not seem to me that this can be regarded as proof that the inner partition walls were not planned along with the outer ones. The depth of the foundations would naturally be proportionate to the load they had to carry, which in the case of the outer walls would generally be greater.—[Ed.]

Staircases, also, are but rarely bonded with the walls against which they are built, though the masons must have known beforehand their intended positions.

This practice of leaving walls and staircases unbonded was fairly safe with a material like baked brick; but in low-lying portions of the city it has undoubtedly hastened the disruption of the masonry. On the other hand, it had this advantage, that where the walls stood free of each other a considerable vertical movement in some of them could take place without affecting the stability of the rest.

It must be admitted, however, that on the whole this method of building showed but little imagination or visualization of how a house would look when finished. The houses of Mohenjo-daro seem to have been built with the sole idea of utility. Those walls that were set on older walls would be fairly stable unless the added weight caused them to sink a little, but it must have been exceedingly difficult to prevent the subsidence of walls built upon a loose mass of earlier remains.

Methods used for batters.

The vertical alignment of the walls of a building is in the majority of cases very good, showing that the plumb-bob or similar instrument was used. The battered outer walls of important buildings were also well aligned, which is not an easy matter when burnt bricks are used. It has to be done by setting each course a little back from the course below it, or else by using specially moulded bricks with ends and sides slightly bevelled. Both of these methods were used at Mohenjo-daro; the latter, however, only in the more important buildings (Pl. LXXVI, *c*). We have not yet found a case where the batter was produced at the expense of the level of the horizontal joints. The battered walls of Mohenjo-daro certainly resemble those with a batter in Egypt, but this method of construction could well have been invented in the two countries quite independently. It was probably derived from the method of building with mud in place of bricks, an operation that can be seen in both India and Mesopotamia at the present day. In building a wall large balls of wet mud, either with or without an admixture of straw, are placed in a line and other balls are placed on top, being well kneaded with the hands or feet. To avoid any subsidence of the damp mass, the width of the wall is made to narrow towards the top, and a day or two intervenes between the building of the consecutive layers for the same reason. This is the most primitive form of building, and yet it is used by masons who are well acquainted with both burnt and green brick. And it has definite advantages over a brick wall, though it is not so neat.

Varieties of floors.

Paving.—The rooms of the houses were floored with three different materials, beaten earth, sun-dried brick, or burnt brick. The first was very common, as being cheap and easily laid, but it is very difficult to distinguish it from the subsequent filling of the chamber. It is only when one has gone down well below the flooring and is able to obtain a section near the walls that a flooring of this nature can be distinguished. No evidence has been found, though constantly looked for, of earthen floors having been plastered with cow-dung, a common practice in modern India. Traces of such a plaster would show in thin lines of black even in the most ancient of sites. Floors of unburnt brick are comparatively rare as such a floor is but little better than plain earth and, moreover, is more difficult to lay. The foundations of large areas such as courtyards were, however, sometimes filled in with this material as being less liable to subsidence than ordinary dry earth.

Burnt brick floors.

Burnt brick flooring is very common and is found in most of the finer buildings. The bricks were generally laid on the flat in one to five courses, according to the area to be covered and the requirements of the owner of the house.[1] Sometimes, though this is not so common,

[1] Three courses are common. I have found five courses only in one place. Cf. p. 149.

bricks were laid on edge in order to make the floor as firm as possible (Pls. LIV, *a*; LV, *c*), and in one case they are even placed on their ends for this purpose.

Streets unpaved.

Bricks were not employed to pave any of the streets and lanes in the Mohenjo-daro site; earth was the only material that was used.[1] From this fact we may perhaps infer that there was no wheeled traffic within the city, though many of the streets were of ample width for this form of transport.[2] Wheeled traffic would hardly have been allowed in unpaved streets in the city, unless the latter were kept in exceptionally good repair. Earth roads were possibly preferred because they could be easily taken up to get at the drains that lay beneath them.

Bathrooms.

Paving of Bathrooms.—Particular attention was paid to the flooring of the bathrooms which are found in nearly every house. Fortunately, these floors are better preserved than the majority of those of burnt brick owing to the fact that they were usually made of bricks cut to various sizes and, for this reason, did not appeal to the brick-robber, either ancient or modern.

Bathroom floors were always most carefully laid (Pl. XLV, *a*), and one suspects that in some cases the surfaces of the bricks were actually rubbed down to procure a perfectly uniform surface. In addition, bathrooms being small, more attention could be paid to their paving. The mason who laid the floor seems to have cut his bricks on the spot, for frequently we find that he had to provide extra small pieces of accurate shape when he reached the sides or corners.

Deposits on bathroom floors.

Sometimes the pavements of these bathrooms are found to be coated with a smooth, dark red substance. Dr. Hamid has examined some of this material for me and pronounces it to be lime mixed with brick-dust. A covering of this description would prevent the pavement from absorbing an undue amount of water. Its polished surface is perhaps due to friction by the feet, though this may have been assisted by oil, as it is customary amongst the Hindus at the present day to rub themselves over with oil after their ablutions.

Occasionally, the flooring of a bathroom is found to be four or five courses thick, the reason for which it is difficult to understand, as, provided the foundations are firm, there is little risk of subsidence in so small an area. A possible explanation is that a considerable thickness was needed to make these floors water-tight in view of the fact that the mortar used in them was always mud. This may also be the reason why the bricks were cut instead of being used just as they came from the mould; cut bricks could be laid with much closer joints.

In two cases, I have found beneath a bathroom paving a layer of ashes of considerable thickness, forming a foundation beneath a flooring of two courses of brick only.

Care was always taken to slope these floors towards one corner, where a drain carried off the water. This is generally a rectangular hole in the wall, through which the water ran out to a drain in the street. On this account the bathroom is usually to be found on the street side of the house (Pl. XXVIII, *b*).

If the room containing the bath was very small, the bath generally occupied the whole of it, but if it was of larger size, the bath was placed at one end, as in Pl. XLI, *b*, or in a corner.

[1] Even at Babylon the streets were unpaved, with the exception of Procession Street and others of great importance. Koldewey, *Excavations at Babylon*, p. 243.

[2] That the chariot and cart were in use at this time is proved by two model chariots that have been found at Harappā, and the cart frames that are so common at Mohenjo-daro (see Pl. CLIV, 8 and 10, and Chap. XXVII). Asses, oxen, or even buffaloes may have been used to draw these vehicles. The two latter animals are commonly used as draught animals at the present day and will even keep up a smart trot when pulling a heavy load.

Wainscoting. When the bath filled the whole room, the bases of the walls were protected by a wainscot of bricks placed on edge and projecting 2 or 3 inches above the floor of the bath. A border of this kind completely encircles a bath placed in the corner of a room. It is difficult to see why this border should have been built to protect the bases of walls which are built of identically the same material, added to which it is always made by setting the bricks on edge and is consequently quite thin (Pls. XXVIII, *b* ; XLV, *a*).[1]

The careful edging of the baths, together with their exceptionally good workmanship and the substantial nature of their paving, suggests that ablutions were an important factor in the religious life of the people of Mohenjo-daro. If this be granted, it is even possible that the water which was used in these rites had some religious significance and that, therefore, all due care was taken that it should not escape elsewhere than to mother earth. It should be added that the brick edging around the baths was not intended to hold up the water ; it was neither thick enough nor its joints fine enough to be waterproof.

Doorless chambers. *Cellars.*—In the course of the excavations many chambers have been cleared which have no trace of a doorway. In others the doorways were blocked up at a later date. In the latter case it is evident that the chambers were re-used to form the foundations of later buildings. But this will not explain the doorless chambers that we find side by side with chambers that are normal in this respect. It is possible that these doorless chambers were used as cellars and entered from above by a wooden ladder.[2] They may also have been used as sleeping apartments in hot weather, like the *tahkhāna* of India or the *serdab* of Mesopotamia, which is an underground chamber entered by means of a ladder in the poorer houses and by a flight of steps in the more important ones. The same arrangement is found in ancient houses of the Scytho-Parthian period at Taxila, and in Central Asia.

Doorways.—The doorways of the houses of Mohenjo-daro are of the plainest description. They are seldom rebated, and the wooden doors must have simply closed against the jambs. It is difficult to understand how they were locked, as only one or two door-jambs have a hole to accommodate a bolt. The wood frames may have been merely fitted inside the brick jambs and kept in place by the weight of brickwork above.

Door-sockets. Door-sockets also are very uncommon. One would expect to find one example, at least, in nearly every house, but this is not the case. When found the sockets are generally made of an ordinary brick with a rough hole scooped in its centre. Stone sockets, which are extremely rare, were made from a large pebble, irregular in shape.[3] We have found no inscribed sockets, such as were common in Babylonia and objects of special reverence.

Dimensions of doorways. We have not yet uncovered a large enough number of doorways of the Early Period to include them in this review, but the widths of those of the Late and Intermediate Periods vary considerably. A large number were measured to see whether they conform to any known system of measurement, but this is apparently not the case, though doorways of exactly similar width were found in both periods.

On grouping together those which closely approximate in size and taking an average of each group, we find that the most usual widths for the doorways were 3 ft. 3 in., 3 ft. 6½ in., and 3 ft. 10 in. Doorways of the following widths are more rarely found : 1 ft. 11 in.,

[1] Possibly this edging is a survival of a former use of unburnt brick. I have found walls of unburnt brick at Kish protected in this way.

[2] The more probable explanation seems to be that from the outset these chambers were filled in solid, as a precaution against floods.—[Ed.]

[3] A small door-socket made of hard black stone was found in the N.W. corner of Chamber 122 in the "L" Area.

4 ft. 4 in., 5 ft. 5 in., 5 ft. 11½ in., and even 7 ft. 0½ in. Indeed, only one example has been found of this last width, viz., the entrance of an unusually fine house in the HR Area.

Even if the ground-plan of a house were laid out with unusual care, there must always have been the possibility of the mason varying the width of the doors by one or more inches. And in the East doorways are customarily made to fit the doors, and not the doors to fit the doorways.

It is a very common thing for doorways to be set at the ends of walls and not in the middle. In such cases there is only one free jamb, and if the openings were provided with doors, as seems doubtful in some cases, they could never have fitted close enough to keep out heat or cold. But the possibility of door-frames must not be lost sight of, though these should have left traces of their presence in the door-jambs.[1] The likelihood that some of these entrances were left doorless is confirmed by the small number of door-sockets that have been found.[2]

Spanning of doorways. Up to the present only one doorway has been found in a perfect state of preservation (HR Area). This has a corbelled arch still in place. It measures 8 ft. 2 in. from the sill to the top of the arch, and is 2 ft. 6 in. in width at the level of the sill and 2 ft. 4 in. at the spring of the arch; that is, the jambs have a slight inward batter. There are eight courses in the arch itself which is 17¼ inches high. It is probable that many other doorways were similarly corbelled instead of being spanned by a flat lintel of wood (Pl. LIV, *b*).

Windows.—Very few walls are sufficiently well preserved to show the kind of window used at Mohenjo-daro. The rebated windows in the fenestrated wall around the Great Bath show us that in some cases at least windows were considered of architectural value. We do not know the original height of these windows, but they average 5 ft. 6 in. in width. The building containing the Great Bath was, however, of especial importance, and one would naturally expect it to possess unusual features.

Windows rare. In the ordinary houses windows are noticeably rare. Even in some of the better preserved blocks, they can be counted on the fingers of one hand. One is forced to the conclusion, therefore, that windows were either not popular or that they were situated so high up in the walls as to have mostly disappeared. If the latter theory be correct, it would suggest that the windows were so placed for security. On the other hand, it is quite usual to place windows high up in a wall in a hot country for the purpose of keeping a room cool. As in the houses found at Ur, doorways were evidently expected to admit enough light.[3]

Gratings. There appears to be a possibility that in some cases windows were protected by gratings similar to those illustrated in Pl. CXXXIII, 10 and 11, and described in Chap. XXIV. It is true that few of these gratings have been found, but as they all seem to have been made of stone and not pottery, it is likely that they were removed when the city was deserted, to serve a similar purpose elsewhere. The very few examples that have been found at Mohenjo-daro are in a badly broken condition.

It has been noticed that the apertures through which the waste water drained away from the bathrooms were, in many cases, of more than ample size (see Pl. XXVIII, *b*). They may

[1] See, however, p. 21, note 2.—[Ed.]

[2] We never find at Mohenjo-daro the shallow reveal in the side of a wall for a door to abut against. This is a very common feature in Sumerian architecture.

[3] No windows were made in the exterior walls of the ground-floor rooms of the houses at Ur, dated to 1300 B.C. *Antiquaries' Journal*, vol. vii, p. 388. Dr. Chiera found that the walls of a house that he excavated at Nuzi, near Kirkuk, were also windowless, and, according to Koldewey, the street walls at Babylon were windowless. *Excavations at Babylon*, p. 242 Nor did I find any windows in the large Palace at Kish.

have served a double purpose by admitting light as well as acting as drains. As they face the street, however, this would have entailed a certain loss of privacy.

Niches used as ventilators.

Ventilators.—Certain niches in the walls of many of the rooms may have been used as seats, but some are too high above the pavement to be used for this purpose. These niches vary considerably in length, and in depth are about half the thickness of the wall in which they are built. My own view is that they were ventilators[1] which communicated with wind-scoops, the niche being boarded up as far as the roof of the house, leaving only a small aperture at the base to allow the draught to enter the room. Ventilators of this type are a common feature in the better-class houses in the Persian Gulf, and they are very common in Lower Sind, where Hyderābād is famous for the number of wind-scoops that each house possesses.

Fire-places.—The fire-places were nothing more than slightly raised platforms, usually placed along one side of a room, and both charcoal and wood were used as fuel. In one house in the HR Area there was an arrangement for boiling water; the vessels were set on a high brick stand with an ample space beneath for the fuel.

Stairways.—Stairways are found in nearly every house and public building at Mohenjo-daro. They are simply made either of solid masonry or with a rubble filling, and are never built on a vaulting ; the inhabitants of Mohenjo-daro apparently never realized the value of the space beneath a stairway. In every house the stairway was built against a wall or in a narrow passage between two walls (Pls. XLI, *a* ; XLIII, *b* ; LVI, *c*). As far as we know, it was never curved.

Narrow treads.

As in the majority of present-day stairways in the East, the treads are extremely narrow compared with the risers ; they average 11 inches high, i.e. four thicknesses of brick, and range from 5·25 inches to 8·5 inches in depth.[2] The more important stairways, like those of the Great Bath and in passage 22 of the same building, conform more closely to European standards, the tread of each step being deeper than it is high (Pl. XXVI, *a*).

The narrowness and unusual height of the treads of the staircases were necessary in order that the staircases should not take up much room. As most of the stairways were inside the houses, and not outside, the space they occupied had naturally to be considered. As a general rule, the height of a tread is double its depth. It would, therefore, take only twelve treads, each 11 inches high and 5½ inches deep, to reach a height of about 11 feet, and the stairway could be accommodated within a space of 5 feet or so.

Stairways to both upper storeys and roofs.

We do not yet know with certainty whether the stairways of the private houses ascended to an upper storey or to the roof. In all probability they did both, for we have reason to think from the thickness of the walls of most of the houses that they carried an upper storey. This is also suggested by stairways being found at the ends of narrow passages that communicate with the street ; these could only have led to the upper part of a house.

Corbelled arch.

Arches.—Only the corbelled arch was known, but its use was frequent. It was sometimes employed for the tops of doorways and occasionally also to cover the elaborate water-channels for which the city was distinguished (Pls. XXIV, *b* ; LIV, *b* ; LXXVII, 2 and 11). In respect of arch-building the people of the Indus Valley civilization were certainly behind the Sumerians, who knew of and employed the true, as well as the corbelled arch before 3000 B.C.[3]

[1] Mr. Mackay's view that these niches served as ventilators is discounted by the fact (*a*) that they are found in open courts as well as in closed rooms, and (*b*) that a number of them are sometimes ranged round the walls of a room, in the form of sunk panels. Personally, I have no doubt whatever that they are merely sunk panels, and this view is shared by the other excavators.—[ED.]

[2] The Sumerian staircases were very similar. Note Mr. Woolley's remarks about a staircase found at Ur, dated to about 2000 B.C. *Antiquaries' Journal*, vol. vii, p. 391.

[3] Woolley, "The Sumerians," *Museum Journal*, Mar., 1928, pl. viii, p. 24.

One would have thought that as the people of Mohenjo-daro made voussoir-shaped bricks to construct their wells, it was but a short step further to adapt these bricks to the building of an arch, especially as they had fairly near neighbours who practised the art.[1]

Unfortunately, owing to the depredations of brick-robbers, but few walls are now high enough to show whether the tops of doorways were always, or only occasionally, corbelled. It is probable that all the better class houses had corbelled doors and that the less wealthy people were satisfied with flat lintels of wood, of which material, then as now, the supply was plentiful.

The art of corbelling was probably well known even before the introduction of brick-making, for flat slabs of stone could have been used for the purpose. In shale and limestone countries there are many districts where the rock is laminated and seems almost ready prepared for the building of corbelled arches.

Flat roofs.

Roofing.—We have sufficient evidence that the roofs of the houses were flat and made of wood. In some of the better preserved walls, beam-holes have been found which show that square-cut beams were used to bridge over quite considerable spaces, in some cases as much as 14 feet or more.[2] These beam-holes generally average about 9 inches square, but rectangular ones have been found, measuring nine by thirteen inches, the longer measurement being the vertical one. The distances apart at which they are set on either side of the chamber vary with the space to be covered and the size of the beams. On these wooden beams planks must have been placed ; the spaces between the beams are generally too wide to permit of the use of matting alone. In the less important houses, brushwood was perhaps used in lieu of planking. That a certain amount of matting was used, in some cases at all events, is suggested by decayed pieces of this material having been found in Chamber 54 in the L Area. The use of matting suggests that clay or earth was spread on top of it to make a water-tight roof, as is done at the present day.

Beam-holes.

We have before remarked that there is reason to think that the rainfall in ancient Sind was considerably more than it is now, and that therefore it was necessary to pay particular attention to the roofing of the houses. The large size of some of the beams, as shown by the beam-holes in one important building in the HR Area (19–23 inches high by 15 inches wide),[3] shows that the roofs were sometimes very heavy, and they may even have been overlaid with one or two courses of burnt brick (Pl. L, *a*). Nothing in the way of a definite roofing tile has yet been found at Mohenjo-daro, but ordinary bricks would serve in their place.

The height of these beam-holes above the paving of the lower chambers in which they were found varies from 5 ft. 4 in. to 10 ft. 6 in. In the upper storeys, if there were more than two, the ceilings may have been loftier, but of this we have at present no evidence.

Drainage of roofs.

The roofs of some of the public buildings seem to have been drained by means of chutes set in the thickness of the walls, which are described a little further on in connection with the drainage system.[4] The roofs of the smaller houses were not, however, drained in this way, and the water would seem to have run off through simple open gutters. Very few of these have been found, but we have enough evidence to prove that these gutters were either made of moulded clay or of bricks that had their channels laboriously grooved out with the

[1] The early Sumerians used only ordinary-shaped bricks for their true arches, though they were acquainted with wedge-shaped bricks and used them for columns.

[2] The beams referred to by Mr. Mackay are for the support of lower storey ceilings, not necessarily of the roofs. That the roofs, however, were for the most part flat may be safely assumed.—[Ed.]

[3] House V, Section B. Cf. p. 191. The beams referred to supported the upper floor, not the roof.—[Ed.]

[4] These chutes may, however, have been intended to serve the first floor bathrooms, etc. This is the view of them taken by most of the excavators.—[Ed.]

aid of a saw or a pick, ordinary sized bricks being used for this purpose. The gutters, therefore, could not have projected any great distance from the wall, as enough of the brick had to be left to be held securely in the wall.

Drain-covers.

Drains and the Drainage System.—A remarkable feature of the city of Mohenjo-daro is the very elaborate drainage system that exists even in the poorest quarters of the city. Every street and lane had one or two water-channels with brick or stone covers that could readily be lifted to remove obstructions. These drains, as a rule, were situated from 18 inches to 2 feet below the surface of the street, but some were certainly not set so low. This is proved by the limestone slabs that cover many of the more important drains in the SD Area showing much polish on their upper surfaces—polish that must have been caused by the feet of the passers-by (Pl. LXXV, *d*). Practically every house had one or more apertures in its walls through which waste water ran out into the street drain.

The street drains are all of the same general type, though they were covered in a variety of different ways. They were all built in a very simple way, as is seen in Pl. LXXVII, 4, 6, 7, 9, and 12. As a rule, ordinary moulded bricks were used and cemented with mud mortar. But in several drains in the DK and SD Areas, though not apparently elsewhere, dressed bricks were used.

Gypsum and lime plaster used for floor of drain.

In the smaller and less important water-channels, the base of the channel is one thickness of brick laid on the flat (Nos. 4, 7, 9, and 12). In the better and wider channels, however, the basal bricks were laid on edge (No. 6). It has been noticed that in some of the drains of the Stūpa Area, a flooring of gypsum and lime plaster was substituted for the usual brick floor.

Methods of covering drains.

As is seen in Pl. LXXVII, various methods were adopted for the covering of these water-channels. The most common is that shown in No. 4, but this method only served where the channel was narrow enough to be bridged by a single brick (Pl. XLIV, *c*). To provide for heavy traffic, bricks were placed on top of one another, as in No. 10, or on edge as in No. 12. A very unusual method of covering a drain, seen only in the Stūpa Area, was by placing a brick on a slant (No. 7), which necessitated one side of the channel being higher than the other, and the channel itself slightly narrower than if the covering bricks were horizontal.

A seemingly unsafe cover was found in the main street of Section C of the DK Area (No. 9), which is illustrated in Pl. LXVII, *a*. By this method, namely, two bricks arranged pent-roof fashion, comparatively wide drains could be covered. Nor were the bricks so insecure as they might seem, for it must be remembered that they were embedded in a stout packing of earth.

In lanes and streets where the traffic was very heavy the drains were sometimes covered with no less than three layers of brick, the lowest on edge, the middle ones flat, and the topmost on edge again. This was frequently the case in the VS Area.

Stone covers.

In the various buildings around the Stūpa, which are perhaps the most important of those found so far at Mohenjo-daro, the drainage system was especially elaborate. Many of the water-channels were so wide that they had to be roofed over with stone (Pl. LXXV, *d*; Pl. LXXVII, 6). As there is no stone in the vicinity of Mohenjo-daro, these blocks of cherty-limestone, which average 1 ft. 6 in. long by 9 inches wide by 4½ inches thick, were probably quarried at Sukkur, about 60 miles from Mohenjo-daro, where this same kind of stone is found. One would have thought it more economical to make a large-sized brick than to bring stone for drain-covers from so great a distance.[1]

Water-channels frequently enter one another from various levels, as illustrated in Pl. LXXVII, 12, especially where the channel of a side lane empties itself into a street drain.

[1] Drains have since been found that were covered with extra-large bricks.

Where a water-channel has to turn a corner the bend is gradual, so as to allow the water to flow without unnecessary friction (Pl. LXXVI, *a*). The curve was generally made with ordinary bricks, but several cases are known in the VS Area of wedge-shaped bricks being used for this purpose. These bricks differ from those used in lining wells, in that they are wedge-shaped edge-wise instead of flat-wise. They were, of course, always placed on edge. **Curved drains**

In some cases the water-channels were so considerable in width that it was found impossible to bridge them by ordinary means. This difficulty was overcome by closing them in with corbelled roofs (Pl. XXIV, *b*; Pl. LXXVII, 2 and 11). These culverts, as they are best called, were not, it seems, intended to be entirely filled with water, for there is always a definite water-channel in the floor of the culvert (Pl. L, *b*; Pl. LXXV, *c*; Pl. LXXVII, 2). The space above was evidently for the purpose of allowing workmen sufficient room to clean out the channel, though there is no doubt that this space would be invaluable for carrying off flood-water. The upper parts of these large culverts were generally loosely blocked up at one end to permit of their being easily entered when required (Pl. L, *b*). **Corbelled drains.**

These elaborate culverts are naturally not found very often. The one shown in Pl. LXXVII, 2 seems to have been built to carry off water from a late building that has quite disappeared. The lower portion of the culvert is of Intermediate date, but its corbelled roof was built in the Late Period. The culvert seen in No. 11, which is fully described in the chapter on the Great Bath, is also Intermediate in date.[1]

This system of street drainage is found at all levels, and it is impossible definitely to date a water-channel by its masonry. The later channels, however, tend to be inferior in workmanship to those of early date in the same way as the masonry of the houses deteriorated in the Late Period.

Practically every house had one or two openings in the street-walls giving on to these water-channels. These are rectangular holes ranging from 14·5 inches high to as much as 56 inches high and 3½ inches wide to 13 inches wide (Pl. XXVIII, *b*). The bases of these apertures or water-chutes are generally bevelled, at angles varying from 30 to 45 degrees, so that the water should flow away rapidly (Pl. LXXV, *b*). **Water-chutes.**

In some of the more elaborate chutes the angle changes two or three times in their course (Pl. LXXV, *a*; Pl. LXXVII, 10). The bricks used to make these chutes are usually bevelled at one end, but the bevelling may have been done after the chute had been constructed.[2]

Sometimes the water-chutes in the walls of houses did not join the street-drains, the water poured into a large pottery receptacle placed beneath the chute (Pl. LXXVI, *b*) and in many cases percolated into the ground through rough holes in its base. In other cases there are no holes in the pottery jar.[3] In some instances these jars were fixed in the ground by brick-covers, so that they could not be removed. The base of the chute was frequently situated at a considerable height above the vessel or drain into which the water was discharged, and on this account it is extremely doubtful whether these particular water-chutes were used for ordinary drainage. Their function was apparently limited to carrying off the water from bathrooms and perhaps waste water used in general household use,[4] for sewage running down the wall would have stained it and have been most obnoxious. **Pottery soak-pits.**

Some of these chutes project slightly from the wall to prevent the water from trickling down its face.

[1] Very similar drains with corbelled roofs are also found at Babylon. Koldewey, *Excavations at Babylon*, p. 110.

[2] It is evident that the angles of these chutes were purposely modified to prevent splash.

[3] All such drainage-jars must have been emptied by hand, presumably by the town sweepers.—[Ed.]

[4] There is a clear case, however, in HR Area, Section B, House XLIX, of two privies being directly connected with a street drain by means of chutes. See p. 207 and fig. 10.—[Ed.]

Sediment-pits. The water from the better-class houses was discharged into well-built brick pits, instead of pottery receptacles, so that any solid matter might settle and not choke up the street drain. These sediment-pits had brick floors and the water entered and left them at higher levels than the floor. One is surprised to find how very small some of these pits are: if much solid matter had escaped with the water from a house, they would have needed to be constantly cleared. The average size of these settling pits is 23 inches long by 15 inches wide by from 11 to 18 inches deep.

Soak-pits. Another type of pit, sometimes of large size, collected the water from a number of water-channels. These "soak-pits", for such they are best termed, were unpaved and allowed the water to soak away into the ground (Pl. XLIII, *c*). As a rule, they were constructed at the points where the smaller lanes or streets entered the larger streets. The water from the former entered the pit on one side and, if abundant, filled up the soak-pit before entering the main street drain. The best examples of "soak-pits" are in the main street of the HR Area. Two rectangular pits, one measuring 4 ft. 8 in. by 3 ft. 3½ in. by 5 feet deep and the other 5 ft. 2 in. by 4 ft. 2½ in. by 6 feet deep, are placed in the line of the main street drain. In one side of the smaller of these pits there are two steps, each made of a couple of bricks placed on edge and projecting for about half their length. A distance of 65 feet separated the two pits, and it is quite possible that more pits of a similar nature will eventually be found further down the street. Soak-pits of this size must have been covered with planks of wood, as there is no evidence that they had corbelled roofs. In fact, the upper edge of one pit is quite intact and there is no room between it and the level of the street for any form of vaulting. We have not yet been able to ascertain where the water flowed from this large street drain in the HR Area, as the ends of the drain both at the north and the south have been entirely denuded away (Pl. XLVII).

House-drains somewhat rare. Drains are comparatively rarely found inside the houses, for kitchens and bathrooms were as a rule placed next to the street wall, so that waste water should not have far to flow. Those house-drains that have been found are simple in construction and closely resemble the street drains, except for being as a rule more carefully constructed. Whenever possible, they were laid immediately under paved floors so that they could readily be uncovered.

Pottery drain-pipes. In Chamber 15, House III, Block 2, Section A, of HR Area, vertical drains made of sections of pottery piping were found, one end of each section fitting into the end of the next (Pl. XLIV, *a*). One of these pipes is illustrated in Pl. LXXXIII, 5. They average 22·3 inches high with an outside diameter of 6·3 inches at the top and 8·1 inches at the base. The thickness of the pottery of which they are made averages 0·4 inches. Each section has a flange 2 inches from the top and projecting 0·8 inches with a thickness of 0·5 inches. All these pipes were carefully made on a wheel.[1]

Pottery pipes of this description are used for both vertical and horizontal drains. In one case a pottery drain was found to have been embedded in gypsum plaster so as to prevent any possible leakage of water at the joints. The water they carried off was discharged into the ordinary brick water-channels.

A horizontal pipe drain, encased in brickwork, was found in Room 9, House VIII, Block 3, Section A, HR Area.

A vertical pottery drain doubtless sometimes served in lieu of a water-chute in the thickness of a wall, to carry off the rain-water from a roof. As yet only two have been

[1] Pipes of very similar make are known in the M.M.I Period at Knossos. Evans, *Palace of Minos*, vol. i, p. 142, fig. 103. Pottery pipes for draining a roof have been found by Dr. Chiera in his excavations at Nuzi, near Kirkuk in Mesopotamia. The house so fitted was of the late Babylonian period.

found, both in the HR Area,[1] but there is no reason to think that they will not eventually be unearthed in other parts of Mohenjo-daro.

The presence of these pottery water-pipes and of the water-chutes set in the thickness of the walls suggest a fairly large rainfall.[2] Evidence has already been given for a considerably greater rainfall in ancient Sind than there is to-day, but I should like to underline the further evidence supplied by the elaborate drainage system of Mohenjo-daro.

Drains not used for sewage.

There are four reasons why it is probable that the drains issuing from most houses were not ordinarily used for sewage but for rain as well :—

1. The fact that the water was sometimes allowed to run down the walls of a house.

2. That both soak and settling pits were generally of small size, so that if solid matter had been allowed to pass into them their constant clearing out would have been necessitated.

3. In most cases the street drains, with which numbers of houses communicated, were not suitable for carrying off solid matter. There would have been a liability for such matter to become deposited at various places along these drains, owing to the roughness of the brick-work. And a side drain frequently enters a main drain at right angles, which would inevitably have led to the settlement of solids unless the main drain was of unusual capacity.

4. The fourth reason why these channels were probably not intended to carry off sewage, is the fact that wells are often placed in their close vicinity ; so near are some of them that sewage would undoubtedly have found its way into them. There is little doubt that the surface water as well as ablution water must have infiltrated into the wells, but liquids of this description would have been comparatively innocuous as compared with actual sewage.

Absence of latrines.

With the exception of those referred to on p. 207, no latrines have been satisfactorily identified as yet. Most of the houses possess, however, a small chamber without a doorway, and it is within the bounds of possibility that these chambers were used as cess-pits.[3] If this was so, the latrines themselves must have been located on the upper floor of a house. Certainly, in some cases these chambers are of too small a size to have been used as cellars.

It is quite possible, however, that no latrines were ordinarily provided. For instance, in the *Charaka-saṁhitā*, written about the second century A.D., and much added to later, we are told that latrines were intended for the sick and infirm only. In that work it is also laid down that one should proceed at least so far from his house as would be reached by an arrow-shot.[4]

Purpose of drainage system.

We have now to consider for what purpose these water-channels and drains were provided. The most satisfactory answer is that they served to carry away rain or other water, for which a similar system is used in Baghdad at the present day. Baghdad has, at present, a rainfall of no more than 5 inches, yet I have seen the streets there flooded after a single storm in the winter. At the end of each winter-season in that city, the series of soak-pits that are placed at frequent intervals between the street drains are cleared of their mud contents in exactly the same way that the soak-pits of Mohenjo-daro must have been cleared. For sewage, cess-pits are used.

[1] Cf., however, p. 277, note 4. There is nothing to show that these pottery drains served to carry off rain-water from the roof.—[Ed.]

[2] This argument is hardly convincing, seeing that in House VIII in the HR Area, the drains discharged into one small vessel which would not have sufficed for a moment's shower. The vertical earthenware drains could not possibly have served to carry off rain-water.—[Ed.]

[3] Prima facie this is highly improbable. The doorless chambers referred to, like many others, were filled in solid to serve as a substructure for the upper storey rooms. In many cases they were filled with crude brick.—[Ed.]

[4] *Journal of Bihar and Orissa Research Society*, vol. ii (1916), p. 141.

There is another point that is of importance. Most of the house-drains at Mohenjo-daro carry off water from the one or more bathrooms that are to be found in practically every house; and if we are right in supposing that these bathrooms were for the purpose of ceremonial cleansing, perhaps more than once a day, we are justified in the supposition that a large quantity of water must have passed through these drains daily in addition to occasional rain-water.

We do not find on the ancient sites of either Egypt or Mesopotamia such elaborate drainage systems as, at present, seem peculiar to Mohenjo-daro and Harappā. In Egypt, for instance, drains were only used in very special cases.[1] They occur more frequently in Mesopotamia, especially in some of the very early periods. At Babylon, corbelled drains and small water-channels have been found in the vast field of ruins, and Mr. Woolley has discovered at both Ur and Al 'Ubaid several examples of drains and water-channels, both of the horizontal and vertical kinds, and also soak-pits and sediment-pits. In this respect he has been more fortunate than those working at Kish; for at that place no channel drains have yet been discovered, though one would have expected to find a system of this kind in the large palace of pre-Sargonic date that was excavated there. The fact, therefore, that drainage systems of any importance should thus be confined to north-western India again supports the view that the rainfall in ancient days was very much greater than it is now.

City walls possibly demolished.

City Walls.—Up to the present no evidence has been found that the city of Mohenjo-daro was protected either by walling or by fortifications.[2] That these once existed, as on other large sites of ancient times, seems more than probable. And it is quite possible that the city walls, if built of burnt brick, would have been demolished by brick-robbers in common with the buildings inside them. Indeed, the outer walls, if they existed, would certainly have been removed before the buildings inside. As fortified walls would necessarily have had very substantial foundations, we may possibly come across the latter when we reach the earlier levels. As an example of fortified walls being completely removed by the brick-robber or by denudation, we can instance those of Kish in Mesopotamia. This city we know from documentary evidence to have been encircled by one, or even more than one, wall. There are now no surface traces whatever to be found of these walls; nor has excavation revealed their whereabouts.

Judging from the small number that has been found of weapons of offence and defence, the people of Mohenjo-daro appear neither to have been a warlike people nor to have feared invasion. On the other hand, it is possible that soldiers were quartered outside the city,[3] and that when these quarters, if they exist, are excavated, we may find ample evidence that the city was well protected from the enemy. Reasons have already been given for thinking that the desertion of the city took place gradually. If this were so, it is probable that armaments were slowly removed at the same time.

Town-planning.

Streets.—That the people of the Indus Valley civilization had some idea of town-planning is shown by the regularity with which the city of Mohenjo-daro is divided up, a regularity which is striking for an ancient city of the east, or, for that matter, would be in a western city of to-day. We find streets, both wide and narrow, on the whole successfully aligned, instead of winding in the way that was usual in most early cities. Indeed, from the very systematic way in which the city is laid out we must conclude that it was methodically planned and not just built haphazard (Pls. XXXIX, LIII, LVII).

[1] Roof gutters are well known in that country.

[2] See p. 9 *supra*. My own view is that the city walls would naturally be buried beneath the deep alluvium of the surrounding plains, where no excavations have yet been done.—[Ed.]

[3] The possibility of soldiers being quartered outside the city must have been a remote one.—[Ed.]

Orientation of main streets. All the main streets, so far excavated, are oriented to the points of the compass, and what little deviation there is is so slight that this orientation is very conspicuous. Houses and public buildings correspond in their orientation with the streets. One would, of course, expect some regard to be paid to the orientation of the more important buildings.

In Egypt, as at Mohenjo-daro, the sides of a building of importance face the cardinal points, whereas in Babylonia it was the corners that faced these points.[1]

Sizes of main streets. The broadest street that has as yet been cleared is in the HR Area (Pl. XXXIX); it is over 30 feet wide. This would, of course, be narrow for modern conditions; but it is quite a respectable width for a city in which wheeled traffic was either not known or little used. A street in the DK Area is in places 28 feet wide (Pl. LXII), and there are also streets 13 feet in width in less important parts of the site.

Lanes. The lanes that divide one block from another vary from 3 ft. 8 in. to 7 feet in width. They were used by people passing from one main street to another, and also for reaching their houses or other buildings.

Alignment of streets. There is evidence that, though every attempt was made to align the streets as regularly as possible, this was done by simple methods only and not with the aid of instruments. Main streets that were evidently intended to be strictly parallel in some cases show slight divergences which were probably due to a lack of refined measurements rather than to carelessness. On the whole, however, the general accuracy is surprising, especially in the shorter distances; for instance, the squaring of the side streets with the main streets into which they lead is, to the casual eye, perfect, though divergences are sometimes betrayed by the plan.

One of two procedures must clearly have been followed: either the city must have been built on a definite scheme from the commencement of its history, which followed perhaps on a compulsory move from another site[2]; or the arrangement of the city was the result of deliberate reconstruction on town-planning lines by order of the city fathers or a higher authority. We cannot as yet say which theory is correct, as it will be necessary first to examine the lower levels after removing the buildings that overlie them.

In town-planning the people of the Indus Valley appear to have been superior to the early Sumerians. The reason for this may lie in the fact that a Sumerian city had to be protected from other Sumerian cities with which it was continually at war. Fortified walls naturally imposed certain restrictions in space, for as far as possible everybody lived within the walls. We have as yet found no indications that the city of Mohenjo-daro was fortified,[3] and this may explain how it was possible to lay it out so carefully. In a densely populated city, as many of the Sumerian cities must have become, there would have been a gradual tendency to build houses of smaller size and to narrow down the streets. Those who have had experience of town-planning will readily realize the difficulties that arise when improvements are attempted within a walled area.

Unornamented façades. In addition to the straightness of the streets, one is struck by the severity and exact alignment of the houses and buildings that flank them. The severity is, of course, in accordance with the old eastern custom of leaving the façade of a house as plain as possible so as not to betray its owner's wealth to the powers-that-be, with possible detriment to his pocket in the way of additional taxes. The alignment of the houses certainly suggests that any deviation from the straight, or any encroachment, would be visited with severe consequences. As all the houses were built of burnt brick, there was, indeed, little opportunity for the owners of property to encroach successfully on the street; the elaborate drainage

[1] See p. 263, note 2.—[Ed.] [2] This procedure is well known in ancient and even in modern India.

[3] See, however, pp. 9 and 282, note 2, *supra*.—[Ed.]

system would also militate against anything of this kind. In fact, all the evidence goes to show that law and order were respected in the city.

Party-walls. Most of the houses, as the various plans will show, are separated only by party-walls. It does not seem, however, that such an arrangement was always satisfactory. There are many instances where party-walls were dispensed with and owners of adjoining houses each had to provide a wall of his own, a distance of only about 6 inches separating the two. The fact is interesting, for it implies that the law was implicit as regards house property. If owners could not come to an agreement over a party wall, the matter seems to have been legally adjusted by a new wall being placed alongside the old one. This arrangement would necessarily reduce the size of the house of the owner of the new wall.

Barred streets. Some of the streets have been entirely barred by thin walls being placed across them. In most cases the cross wall has a pronounced curvature, which owing to its being generally only one brick thick was perhaps necessary to ensure stability. These cross-walls, all of which belong to the Late Period,[1] may perhaps have been constructed in an attempt to divide the city into wards for the purpose of public security.[2]

It is noticeable that some of the side lanes do not run in a straight line from one main street to another. Though otherwise well set out, they have right-angled turns. This may be seen especially in some of the streets on the eastern side of the HR Area, a section that is occupied by important houses. Perhaps an enlargement of property took place here and the lanes were altered accordingly (Pl. XXXIX).

Rounded street corners. Many of the corners of the streets are slightly rounded, as if they had been worn by pack animals rubbing against them. In two cases, however, this rounding was intentional, the corners having been trimmed down with some instrument and subsequently rubbed smooth by traffic. The same has been observed at Ur.

Sacred Buildings.—It is unfortunate that no building that can definitely be stated to have been a temple has yet been found either at Mohenjo-daro or Harappā. This does not by any means prove that no temples were built. Many buildings have been found that are clearly not ordinary dwelling places or administrative buildings ; for instance, Sections A and E in the DK Area, though at present we cannot determine their uses with any degree of certainty, and the objects found in them, unfortunately, prove nothing. Indeed, for all we know, the temples of Mohenjo-daro may, for conservative reasons, have been of wood and perished altogether. Whatever their form and material, one thing is certain, viz., that they did not in any way resemble the temples of Sumer or Babylonia. No trace of a ziggurat with its associated temple has been unearthed at either Mohenjo-daro or Harappā. In Sumer, a temple is readily recognizable even apart from its tower, and one could wish that the same were true of the supposedly sacred buildings of the Indus Valley people. Up to date not a single building has been found whose plan in any way resembles that of the Babylonian temple with its temple-tower,[3] its large open court for worshippers, well supplied with water, and its especial shrine for the god or goddess at the end of the court. This alone would, in my opinion, suffice to show that the religions of the Sumerians and the Indus Valley peoples were dissimilar.

The people may have worshipped at comparatively small shrines scattered throughout

[1] We may find the arrangement in the lower levels.

[2] For an account of a closed lane at Ur see *Antiquaries' Journal*, vol. vii, p. 389. See Pl. XXXIX, Street 3, and Lane 1.

[3] We already know from Kish that the temple-tower goes back as far as 3000 B.C. One such is built of the early so-called plano-convex bricks.

the city, whose design differed but slightly from that of the ordinary dwelling house.[1] Or we may eventually find a temple somewhere outside the city, which was destroyed for its bricks soon after the desertion of the city itself.

General Remarks.—Brick-built ruins of this nature are certainly welcome to the archæologist, owing to the comparative ease with which they can be excavated. On the other hand, this material was always eagerly sought after in later periods, with the result that such sites in populated districts were repeatedly used as brick quarries. It is likely enough that some sites belonging to the Indus Valley civilization have been entirely removed in this way. In a vast alluvial country we cannot expect fine stone buildings such as we find in Egypt. The next best thing, namely, burnt brick, was therefore liberally used by the Indus Valley peoples. It must be confessed, however, that this material was not always used to the best advantage. For some reason or other—it may have been religious—there was obviously some objection to the ornamentation of the walls of houses or larger buildings, with the result that, from an architectural point of view, both Harappā and Mohenjo-daro must have appeared to visitors from outside to be rather dull places. The plain severe façades and long bare walls are totally unlike the panelled walls that were a feature of Mesopotamian architecture even in the earliest times. It is possible, however, that the panelling that was so general in Mesopotamian buildings was not originally due to a desire to beautify them. It may have been intended to protect a wall, especially a long one, in attacks by enemies. The presence of towers at frequent intervals along a wall would necessitate the making of numerous buttresses; and when, later, it was realized what an improvement they afforded to the walls from the architectural point of view, these buttresses would have eventually lost their original purpose and become purely decorative.[2]

The chief cause of the gradual destruction of the buildings of Mohenjo-daro has been the action of salt. This works up to the surface of even the highest mound, and is continually splitting up the burnt bricks into minute fragments which are eventually carried down to the base of the mound by rain. The effects of wind erosion are practically negligible, for violent winds are few and far between. The breaking up of the bricks by salt is naturally unequal; for instance, a wall may be built of bricks of varying degrees of hardness, in which case the badly burnt bricks naturally suffer the most, whereas the overburnt or vitrified bricks are hardly affected at all, owing to their partially glazed surfaces preventing the entry of salt. The mud-mortar, which was largely used, has also proved a factor in the destruction of the walls; for the joints were generally coarse, and when the face of a wall has been laid bare, the mortar disappears, leaving the formerly protected sides of the bricks exposed to the air.

Walls of sun-dried brick do not suffer in the same way. But we find very few such walls belonging to the period of the Indus Valley civilization. The drum of the Buddhist Stūpa built upon the top of the highest mound at an elevation of 71 feet is, however, built of mud brick.[3] And it has suffered surprisingly little from the attacks of salt or rain.

It is fortunate, indeed, that Mohenjo-daro is situated in a very isolated part of Sind. If this had not been so, very few of its buildings would still remain. Bricks of such a handy size, and which, owing to the loosening of the mud-mortar between them, can be so easily removed, would have proved a boon and a blessing to the inhabitants of any town close enough to avail itself of such a precious "brick-mine". A certain amount of damage was done to the site anciently by the inhabitants themselves, who repeatedly re-used the bricks, and

[1] Similar perhaps to one that has recently been found at Ur.

[2] We must not, however, lose sight of the theory that the origin of panelled walls is perhaps to be found in the earlier use of wood. The panelling of the walls of early dynastic buildings in Egypt is said to have had this origin.

[3] The core was of mud brick; the facing of burnt brick.—[ED.]

by the Buddhist monks who, at a later date also, employed the bricks of the 3000-years-old city for their own buildings. The site of Harappā, some 400 miles away, is not so fortunately situated. The amount of destruction wrought there has been enormous, both in ancient times and especially in the last hundred years.

There is every indication that the habits of the people of Mohenjo-daro were, in general, those observed at the present day in any large-sized town in India, where the better-class inhabitants keep to their selected quarter of the city and the poor have their own quarters. Certain streets seem to have been reserved for bazaars, and judging from their number the city seems to have been prosperous. A large city of this kind must have served a considerable population around and doubtless it was visited on festival days by large numbers of people. Certain sections of the city were given up to different industries, such as potteries and shell-cutting, but these trades appear only to have existed within the city towards the latter end of its history. At first Mohenjo-daro seems to have been very largely residential,[1] but later on it became, in part at least, a manufacturing town.

The fact that the city was built of burnt brick argues that those who lived within it were a prosperous people. Burnt brick is an expensive commodity. It requires a large amount of fuel to burn it and the wastage due to overfiring, warping, and cracking is very great. Very few defective bricks are found in the walls of Mohenjo-daro, which shows that a proper selection was made of the bricks and that rubbish was not used. The almost total absence of sun-dried bricks[2] indicates, I think, that the city regulations forbade the use of this material, though it is possible that it was allowed outside the city, whence it has totally disappeared through flooding or other causes.

[1] This inference hardly seems justified by the evidence at present available. Of the earliest cities on this site nothing has yet been excavated.—[Ed.]

[2] That is, in the superstructures. Sun-dried brick was common enough in the foundations.—[Ed.]

Chapter XVII

PLAIN AND PAINTED POTTERY, TABULATION OF PAINTED POTTERY

Comparative absence of pottery.

CONSIDERING the large areas that have already been cleared at Mohenjo-daro it is somewhat surprising that so few complete vases have been found. Potsherds there are in abundance, but in comparison with later sites in India perfect pieces are comparatively few. A possible reason for this may be that the Mohenjo-daro site was deserted gradually and its inhabitants had, therefore, ample time to remove even their commonest household vessels. This is in marked contrast with many Mesopotamian sites, where much pottery was left behind on the expulsion or extermination of the inhabitants by invasion or the constant warfare that was taking place between the various city states.

Little resemblance to outside wares.

As might be expected, little of the pottery from Mohenjo-daro resembles in shape that hitherto found in Mesopotamia and Elam. The wares even of adjacent countries are seldom much alike in form ; each race evolves such shapes as are suitable and uses them with but slight modifications over long periods. It will be seen that most of the pottery forms are far removed from being primitive, showing that the potter's craft was well advanced.

Hand-made ware rare.

Practically all the pottery of Mohenjo-daro was wheel-made. Very few, indeed, are the examples that have been found of hand-made ware, and these are frequently so roughly made that they appear to be the work of children.[1] But it is not yet known whether the hand or the foot-wheel was used, though the latter seems indicated by the evenness of the pottery and the regularity of the striations.

Foot-wheel in India.

The use of the foot-wheel, or quick-wheel, in India is confined at the present day to Balūchistān, Sind, and the Panjāb. In other parts of India the wheel resembles a cart-wheel and is spun by hand, sometimes more than once during the making of the jar, if it be very large or of complex shape. The foot-wheel used in Sind at the present day is of exactly the same pattern as that used in the Bahrein Islands, Mesopotamia, Syria, Palestine, and Egypt.

Period at which it was introduced.

The period at which the quick-wheel was introduced into Sind and the Panjāb is a point of considerable interest. The possibility presents itself that it was brought in by the people or peoples that built and inhabited Mohenjo-daro and not by the Āryans, since the latter are hardly likely to have set up their own potteries, if such already existed in the territories that they occupied.[2]

If it cannot be accepted that the quick-wheel was invented as early as 3000 B.C., we must look for evidence of its introduction by later invasions of India. The Āryan may perhaps be ruled out, for the reason that he is generally considered to have been a nomad ; and nomad peoples rarely use pottery at all, preferring less fragile vessels of wood or leather.

[1] The jar in Pl. LXXXI, 31 was hand-made ; also most of the handled types in Pl. LXXXIII. The smaller jar-covers were also frequently made by hand.

[2] There is no mention of the potter's wheel in the Rigveda, though there is of pottery. The omission, of course, proves nothing.

The potter's caste is one of the lowest there is at the present day in India, and we may suppose that the potter was equally despised by the early Āryan, who probably had little use for his wares at first ; but, as the Āryans gradually settled down, they would have made use of the potter's wares more and more as time went on.

The foot-wheel may possibly have been introduced into India by the Greeks or one of the later invaders, Parthian, Scythian, or Arab. We know from a bas-relief at Philae that it was used in Egypt[1] in Ptolemaic times, and it was, therefore, probably known to the Greeks during the later periods of their history.[2] It was certainly known to the Romans ; and it is possible that the spun-wheel and the foot-wheel were in use at the same time ; for we actually find both employed in Italy as late as the sixteenth century A.D.[3]

Advantages of foot-wheel.

The advantages of the foot-wheel, the true potter's wheel, over the spun-wheel are many. The spun-wheel has necessarily to be very heavy to maintain its momentum long enough to throw several vessels. Again, the diameter of the wheel has to be of sufficient size to prevent wobbling and this diameter prevents the potter from getting as close to the clay in the centre of his wheel as he would like. Thirdly, the momentum of the wheel has to be resuscitated at frequent intervals, according to whether large or small vessels are being thrown. Fourthly, the speed of the wheel cannot be regulated properly. It can be slowed down, but to speed it up it has first to be stopped. Despite all these disadvantages, however, the potter of India can and does produce very creditable work with the spun-wheel.

Hand-wheel in India.

The wheel that is used in the greater part of modern India somewhat resembles a cart-wheel. It is made of wood, and its rim plentifully daubed with clay to balance it. The middle of the upper surface of the wheel is flat to take the clay. The centre of the lower surface usually has a hard stone fitted into it with a small hole in its middle, in which works the wooden pivot set in the ground.[4] The wheel revolves at a height of a few inches above the ground, and is set in motion by a stick inserted between the spokes. A properly balanced wheel shows remarkably little wobble, but great care is necessary to obtain this desiratum.

Invention of wheel.

Dr. Hall has suggested that the potter's hand-wheel originated in Elam,[5] and he remarks, " the epoch-making invention of the cart-wheel was also probably made there." Whether, however, the one invention influenced the making of the other must for the present remain a moot point. The chariot has not yet been actually discovered in early Elam itself, but there is ample evidence that it was known, if it was not actually used there.

When one reflects how simple an apparatus the potter's wheel must have been in its earlier stages in comparison with the much more complicated chariot-wheel, it seems likely that the idea of the wheel originated with the potter. The primitive potter's wheel was merely a round piece of wood with a pivot-hole in its underside which was not spun, but turned continually with one hand, while the clay was manipulated with the other. This is the method employed in Sind at the present day for painting pottery, and such a contrivance could also be used in its manufacture.[6] It could not have been long before such a wheel

[1] It was not until the Fourth Dynasty that pottery was made on a wheel, and without doubt that wheel was of the spun variety.

[2] According to Evans, the foot or quick-wheel was used in Crete before the close of the M.M. II Period (*c.* 2000–1900 B.C.). *Palace of Minos*, vol. i, p. 264, n. 2. See also remarks by Hall in *The Civilization of Greece in the Bronze Age*, p. 47, n. 4.

[3] " Ceramics," *Encycl. Brit.*, 11th ed., vol. v, p. 707.

[4] Certain pebbles commonly found in ancient Egypt, Sumer, and elsewhere, that are partially bored and whose holes show traces of polish, may once have belonged to potter's wheels. They have, hitherto, been supposed to be the sockets of bow-drills, etc.

[5] *Cambridge Ancient History*, vol. i, p. 579.

[6] Cf. "Painted Pottery in Modern Sind ", *J.R.A.I.* vol. lx, p. 132.

was made heavier to accommodate larger vessels, and subsequently became so altered as to allow of its being spun of itself, while one or more jars were being fashioned ; it was thus developed into the quick-wheel, which was possibly the type used at Mohenjo-daro.

Clay. The clay of which most of the pottery is made appears to be slightly different from that used by the potters who practise their art in the vicinity at the present day. The alluvial clay which they take from the fields around requires comparatively little tempering material. It burns a light red colour (Pls. LXXVIII–LXXXVI).

Dégraissants. The ancient pottery of Mohenjo-daro frequently has sand[1] or lime, or both, mixed with the clay, more often in the painted ware than in the plain ware. There seems to have been a natural admixture of sand in the alluvial clays used at Mohenjo-daro, but so fine in quantity that it cannot be detected under a glass of moderate power.

Special paste. A special paste was sometimes used for the smaller jars which was very close in texture and burned a pinkish colour in the kiln. It contains neither sand nor lime, but these materials would hardly be required in vessels of small size, whose dimensions prevented any tendency to warp or crack in the processes of drying and baking.

Grey ware. Another kind of paste was slate-coloured—in some cases approaching black—and exactly like that used in the pre-Sargonic period at Kish. Its colour is probably due to a natural clay, but ware of this description can also be made by mixing a light-coloured clay with an organic substance, such as cow-dung, which carbonizes when baked. The examples found at Mohenjo-daro show no traces of carbonized material, but this may be so finely divided that it is impossible to detect it under a glass of moderate power. This paste was somewhat rarely used, but it was not confined to one type of jar only, as is seen in Pl. LXXXIII, 28–43, which illustrate jars made of it. Vessels made of this kind of clay are of medium thickness ; neither lime nor sand is ever mixed with it. It never has a slip, but its surface is frequently polished.[2]

Kilns. The Mohenjo-daro ware is, on the whole, well baked, and withstands the attacks of damp and salt.[3] How it was baked we do not yet know, but it is of interest to note that in Sind to-day pottery is baked without a kiln ; the jars, both large and small, are laid on, and covered over with fuel with no enclosing walls or even a hole in the ground to keep in the heat. Even modern painted pottery is fired in this way with very satisfactory results. The advantage of this method of baking small quantities of pottery is that there is little wastage in warped or over-burnt specimens.[4] Probably much more fuel is required, but this is not a consideration of importance in many parts of the Indus Valley at the present day,[5] and it is likely that in ancient times also there was no lack of fuel.

Flat bases. It is noticeable that the great majority of the vases of Mohenjo-daro have flat bases. In very few, indeed, is the bottom round.[6] Certain types are peculiar in having very pointed bases which prevent their standing without special support (Types B and R). As most of the rooms in the houses and other buildings of Mohenjo-daro have well laid pavements, it was essential that the vessels in use there should stand firmly. In the smaller villages around, the houses were probably not so well built, and, as at the present day in Sind, round based jars were probably preferred because they stand better in soft soil.

Finish of base. In most of the pottery the base was not so well finished as the upper portion. This is

[1] This sand often contains a great deal of mica.

[2] This grey ware was extensively used in ancient times for Buddhist food-bowls. It is especially common in the Kushān period.

[3] The painted ware is exceptionally tough.

[4] Warped or over-burnt vessels are rare at Mohenjo-daro.

[5] Dung is largely used as a fuel at the present day with a covering of brushwood at the top of the pile.

[6] Pl. LXXX, Type F.

especially noticeable in the rougher ware. Jars of Type G (Pl. LXXX), for instance, were made in two ways. Either they were detached from the wheel by means of a cord or piece of twisted grass, or they were removed in some other way which necessitated the trimming of the base afterwards with a knife or a piece of edged bone. The process of trimming the base with a knife is especially noticeable in the "handled cup" type, most of which was hand-made.[1] This trimming of the base is also seen in the pottery of Jemdet Nasr in Mesopotamia,[2] both wheel and hand-made, especially in the jars whose bases are very thick; and it is to be found in Old Kingdom pottery of ancient Egypt.

Practically all the flat-based pottery shows a focussed grooving on the base which is due to the jar being cut from the wheel by the aid of a string. This was done when the jar was revolving slowly. The string was either held between the two hands or, as seems more likely, one end was tied to the little finger of the potter and the other stuck against the base of the vessel to be removed. The revolution of the jar then automatically completed the operation. This is the method still practised in Sind and the Panjāb, including the Simla district.

Though they were very common in Mesopotamia about 3000 B.C., the small number of ringed bases in the pottery of Mohenjo-daro is noticeable. Those few that have been found are all carelessly made (Pl. LXXX, 29, 31, 32, 34, and 70; Pl. LXXXI, 27 and 31; Pl. LXXXVI, 14 and 23).

Method of manufacture.

A few of the jars, i.e., those with angular shoulders, were made in two pieces, which were fitted together when wet and returned to the wheel for a final trimming-up. It is likely that in some cases the neck of the jar was also made separately.[3] This method of making a jar is sometimes hard to detect, for the join or joins were frequently obliterated inside and out by the final trimming. These joints, however, are apt to betray themselves if the jars are crushed by earth pressure, for the breaks are clean and regular. The making of jars in two or more parts has been noted at Kish, at Jemdet Nasr, and at Susa and Musyān. And in Sind at the present day certain types of jars are made in three, and even four pieces. Of the pottery of Mohenjo-daro, Type E (Pl. LXXX) was made in this way, also Jar 17 of Type J (Pl. LXXXI), and the ribbed vessels (Type F, Pl. LXXX).

Slips.

As would be expected, most of the jars had slips applied to them which vary from a very thin wash barely concealing the natural surface of the pottery to a thick coating coloured either red or cream. The thicker slips more or less conceal the natural roughness of the clay, and were usually rubbed down smooth after the jar had been removed from the wheel. In only one case (Pl. LXXXII, 1) was the natural surface of the jar rubbed down.[4]

Sometimes a jar was only partially covered with a slip—in every case on its upper portion—generally because the lower portion was of rougher workmanship, but occasionally because the upper part of the jar was to be decorated. In the two vessels illustrated in Pl. LXXXI, 27 and 31, the upper portion only is coloured, with a red wash in the first case and a red slip in the second. In the jar illustrated in Pl. LXXXI, 22, a fine red slip was used for the upper and a rough wash for the lower portion of the jar. In No. 23 in the same plate two slips were used, dark red above and light red below. In this last case it is possible that a light red slip was first of all applied to the whole of the jar and that this coating was darkened where required by means of paint.

Not a single example has been found at Mohenjo-daro of the base of a jar being coated with a polished slip. The pottery of Jemdet Nasr was often so decorated, as, when suspended by its lugs, its base could be seen.

[1] Pl. LXXXIII, 13–27.

[2] 13 miles N.-E. of Kish.

[3] This practice was a common one anciently. It was adopted by the Greeks and by the Chinese.

[4] The grey ware is excluded from these observations.

Though the method of scoring a jar to decorate it is common in certain types of vessels, decoration done with a cord was, on the whole, rare at Mohenjo-daro, though common in Mesopotamia from 2000 B.C. A cord is wound around a vessel while it is being revolved slowly on the wheel, or even while the jar is stationary. Two vessels found at Mohenjo-daro were treated in this way, viz. the large vessel in Pl. LXXXIV, 23 (the cord mark is unfortunately omitted in the drawing) and the jar shown in Pl. LXXXVI, 1, where there are three cord marks.[1] In this fine jar, which is not included amongst those arranged in types, the rim and neck are painted an unpolished warm-black colour. The lower part of the jar from the ribbing downwards is coated with a cream-coloured slip. **Cord decoration.**

Very rarely do we find examples of glazed pottery. The two sherds pictured in Pl. CLIX, 1 and 2, of which a full description is given in Chapter XXVIII, are made of a light-grey clay coated with a thin glaze and decorated with wavy lines of a purplish-black colour.[2]

Incised Ware (Pl. CLVII, 1–7).—We have found very few examples of incised ware at Mohenjo-daro, and these are all comparatively small fragments (Pl. CLVII, 1–7). The third piece illustrated (DK 895) is a portion of a flat-bottomed dish incised with crescentic markings arranged in concentric circles. Another piece is part of a bowl with incised markings on its shoulder. From the level at which this piece was found, however, I am inclined to think it is of later (Buddhist) date. Another piece (VS 2662, Pl. CLVII, 1) is a large portion of a flat-bottomed pan with a rosetted design, which was apparently made with a smooth tool like a piece of bone. This design is exceptionally interesting, as it is exactly like the design on the inside of a flat-based pan found at Kish (I.G.W. Site) which belongs to the period of Hammurabi (2180 B.C.).

No. 4 in Pl. CLVII (DK 455) is the base of a pan whose inner surface was decorated with overlapping circles. No. 2 (DK 711) and No. 5 (A 406) are fragments of flat-bottomed dishes also ornamented with an incised design of circles. No. 7 has similar markings to No. 3, but they are not arranged with such regularity. **Incised work on pans.**

Incised pottery appears to have arrived in Mesopotamia after the appearance of painted pottery, though it has been generally supposed that owing to its more apparent skeuomorphic origin it was the prototype of painted ware. At Mohenjo-daro, as will be noticed from the descriptions of the only pieces that have been found, incised decoration was confined to the bases of pans, and always inside. Why this kind of decoration should have been reserved to such humble vessels it is difficult to say. It could hardly have been intended for ornament, as it would have been hidden most of the time. Probably this incised work was not intended solely to be decorative, but to serve some more useful purpose ; for example, its roughness may have assisted in rubbing or cleaning grain, or even in the cleansing of clothes.

Pot-Marks.—Very little of the pottery was marked in any way to distinguish the maker or owner.[3] The three pieces illustrated in Pl. XC, 3, 4, and 5, bear a potter's mark. The mark seen in Pl. XC, 7, occurs on the stand illustrated in Pl. LXXXIII, 52 (VS 1026) ; it is made up of two characters, both of which occur very frequently on the seals. These characters were deeply incised on the lower surface of the stand before baking, and they are either the potter's private mark or a mark made by him for his customer. The rough character, No. 3, found on a sherd was also scratched on the jar before it was baked.

The potter's mark shown in Pl. XC, 4, is on the outside of the broken dish or basin (DK 2644) illustrated in Pl. LXXXII, 28. It is painted in black, but is unfortunately incomplete. This character must be the potter's own work, since the colour is baked. **Painted pot-mark.**

[1] Since this was written a jar has been found decorated with six horizontal cord marks forming a kind of band.

[2] See also Appendix II.

[3] Incised potters' marks are, however, common at Harappa.

Seal impressions.

Five fragments of jars bear seal impressions (Pl. LXXVIII, *1* and *3*; Pl. CXV, *558–60*), in two cases upon the shoulder close to the neck of the jar, and in two close to the base. In one case, the position of the impression cannot be determined. All these jars, or fragments of jars, belong to the Scored type of pottery illustrated in Pl. LXXX, 1–8.

Two of the inscriptions are the same (one of them is shown in Pl. LXXVIII, 3), but they were not made by the same seal; for in one there are only the characters, whereas the other shows the figure of a bull also. The other three impressions are composed of characters only. It is possible that these seal impressions are also potter's marks; for they were impressed before the jars were baked. That they were not intended to mark temple or sacred property seems to be implied by the inscriptions being different in three cases.

Miniature vessels.

A noticeable feature of the pottery of Mohenjo-daro is the minute size of some of the jars. That these are not the work of children is proved by their very careful finish in most cases, and also by the fact that many of them were painted with great care. They are also wheel-made. Some of these are shown in Pl. LXXXI, 33–40. In some cases these beautifully made miniature vases are only 0·5 in. to 0·75 in. high. What they could have been used for it is difficult to say; possibly they held scented oils or unguents.[1] They recall, though not in shape, the very small and equally well-made jars which were so common at Jemdet Nasr and whose use is also uncertain.

Painted wares not of particular shape.

No particular shapes were reserved exclusively for painted ware, though some types, like the handled cups and others of very rough make such as Type B (Pl. LXXX), were never painted. Even jar-covers and jar-stands were decorated on occasion, though in most cases somewhat roughly.

Offering-stands.

A type of pottery especially common is the offering-stand or censer. Very few whole specimens have been found, but the great number of fragments prove that this utensil was in very common use. In the majority of cases they were very carefully made and finished. Most of them were coated with a fine red slip, some have designs painted upon them in black, and one is decorated in polychrome. We do not yet know definitely for what purpose these utensils were used,[2] but they are very similar in shape to the offering-stands found at Kish,[3] especially those with the longer stems (Pl. LXXIX, 17, 21, 23, etc.). The squat type of offering-stand is rare at Kish, but they occur at Susa[4] and have also been found at Anau.[5] As pointed out by Professor Childe, similar vessels are typical grave-furniture at Lengyel in Hungary, and also occur in many contemporary cemeteries and settlements in the Danube Valley and Transylvania.[6]

Absence of spouted jars.

It is surprising that the spouted jar was not known at Mohenjo-daro,[7] considering its great popularity in Babylonia and in Elam throughout a very long period. The nearest approach we have found to this type of jar is the small vessel illustrated in Pl. LXXXIII, 20, but apart from its spout this jar in no way resembles the usual forms of spouted ware. If we are right in dating the upper levels of Mohenjo-daro to about 2750 B.C. on the evidence

[1] They may have been made for funerary purposes.

[2] A small specimen of squat form found at Harappā had undoubted marks of burning around the edge of the pan and had been used possibly as a lamp. The larger vessels from Mohenjo-daro could hardly have been used for this purpose.

[3] Mackay, *Report on the Excavation of the "A" Cemetery at Kish*, Field Museum, Chicago, Pt. I.

[4] *Mém. Dél. en Perse*, t. xiii, pls. xi and xii.

[5] Pumpelly, *Explorations in Turkestan*, vol. i, pl. xi, figs. 4 and 6. The long-stemmed offering-stand also occurs at Anau. See fig. 5 on the same plate.

[6] *Antiquity*, March, 1927, p. 120.

[7] Since this was written a jar spout of a similar nature to those known to us in Mesopotamia has been found in the DK Area. Mr. Vats found a small spouted vessel in VS Area. Cf. p. 227.

of the Indian seals found in Mesopotamia and at Susa, we are perhaps hardly justified in expecting the spouted vessel, seeing that it was losing its popularity in Babylonia at about this date. On the other hand, it is very popular at the present day both in Sind and in the Panjāb, and in Mesopotamia. Excavations being carried on at Jhukar, not far from Mohenjo-daro, have brought to light many examples of finely painted spouted ware, all of which can be dated to the Kushān period. It is possibly from this time, therefore, that the modern spouted jar has descended.

Balūchistān pottery. The pottery and fragments of pottery shown in Pl. XCIII, 9, 10, 28, and 31–4 come from two sites in southern Balūchistān.[1] The designs are too few to establish any connection with Mohenjo-daro; nor do the forms of the pottery agree. Nos. 28, 32, and 33 are, however, very closely allied by the position and form of their lugs with the painted pottery found at Musyān and at Jemdet Nasr. The cup-like spout with a wavy edge (No. 34) is almost exactly duplicated by a similar spout found at Jemdet Nasr, and the spouted jar with a handle (No. 31) is also of a type known at that place. These last two objects alone afford quite sufficient evidence of a connection in early days with Babylonia, as do the lugged jars with both Elam and Sumer. Twisted rope-like handles, too, occur at Jemdet Nasr, where several fragments were picked up on the surface of the ground.

Suspensory holes. *Suspensory Jars.*—Jars with holes for suspension are rarely found at Mohenjo-daro. In the few examples that we have, the rim is pierced with one, two, or more holes to allow of their being hung up by cords from a beam to keep their contents from the ants. The small pierced lugs which are so common in the wares of Musyān and Jemdet Nasr are never found at Mohenjo-daro.

TYPES OF POTTERY

Offering-stands or Censers, Type A (Pl. LXXVIII, 8 and 14; Pl. LXXIX, 1–23).

Offering-stands were in common use at Mohenjo-daro and vary in size from model specimens, only 3 inches or so high,[2] to imposing specimens over 2 feet high. In appearance they are very like the stands from Kish, except that they are seldom decorated, save by a few black bands on a red slip; and they never have incised decorations, as is the case with practically all those from Kish. As a general rule, they were very carefully made. A small proportion of sand and lime was usually mixed with the clay to prevent the twist or warp to which such long and peculiarly-shaped vessels are particularly liable on being baked. Owing to their shape, offering-stands were also liable to damage by earth pressure, which accounts for their seldom being found unbroken. Those unearthed at Mohenjo-daro are practically all badly damaged.

Popularity of offering-stands. The popularity of this type of vessel is proved by the number of stems that have been found. Owing to their thickness and shape these are practically indestructible, whereas the wide open pans and bases are broken up and lost.

Method of manufacture. All the offering-stands of Mohenjo-daro were made on the wheel, and like those at Kish in two sections, of which the stem and base form one and the pan the other. The joint between the two portions is in most cases very carefully concealed. In all probability, when the two pieces had been joined together, the utensil was placed on the wheel again for a final trimming-up.

Slips. Most of them are coated with a thick red slip, which was so carefully rubbed down that it resembles lacquer. The usual decoration is a few painted horizontal bands, but sometimes the

[1] Found by Major Mockler at Chidizi and Dambakoh, in 1877. The pieces are now in the Indian Museum, Calcutta. *Catalogue* (1883), pt. 11.

[2] Pl. LXXIX, 6–9. One model stand is only an inch high.

ornamentation is more elaborate. The fragment of an offering-stand found in the HR Area, which is illustrated in Pl. LXXIX, 19 and Pl. LXXXVII, 3, is painted in bichrome, red and black, on a pinkish slip. The pattern is intended to represent fluting, but is unfortunately very much weathered. Beneath the slip, the ware is light red in colour and the paste has been so copiously mixed with lime as to render it very soft.

The offering-stands of Mohenjo-daro fall into three groups :—

(*a*) Squat forms (Pl. LXXVIII, 8 and Pl. LXXIX, 2, 3, 4, 5, 10, and 14).
(*b*) Those with long plain stems (Pl. LXXIX, 1 and 17).
(*c*) Those with moulded stems (Pl. LXXVIII, 14 and Pl. LXXIX, 21, 22 and 23).

Squat offering-stands.

(*a*) *Short squat offering-stands* seem to have been the most common, though it is possible that their very squatness led to their better preservation. They are mostly ornamented with broad bands of red, which were usually painted on the surface of the pottery without an intervening slip. The use of red for painting designs on pottery is almost exclusively confined to this type of ware ; on other types, except the grey ware, it is rarely used for any other purpose than colouring the slip. Owing to the great thickness of their stems the stands of this group could not have been carried about conveniently, and it is probable that they were kept in one place, e.g., as censers for temple use. The broad substantial base would have prevented their being easily overturned, a necessary feature in a utensil of this kind.

Tall offering-stands.

(*b*) *Offering-stands with long plain stems* are almost as frequently found as the members of Group (*a*). No. 1 in Pl. LXXIX (HR 466) is coated with a pinkish slip and has no decoration whatsoever. Nor has No. 17 (VS 3034), which is coated with a cream slip. As a general rule, stands of this group are seldom decorated ; if they are, the decoration is always confined to broad red bands.

Moulded stems.

(*c*) *Offering-stands with moulded stems*, in addition to having a more elaborate stem, are almost invariably covered with a thick red polished slip. A ball-like moulding at the top of the stem is the most common form ; a fluted moulding at the base of the stem is but rarely found. It is possible that this ball moulding at the top of the stem was devised to prevent the hand coming into contact with the hot pan.[1]

Description of stands.

Stand 21 (VS 478) in Pl. LXXIX is exceptionally well made of a clay that is heavily mixed with sand and lime. It is coated with a smooth dark red slip. The pan and base have been restored. The stem of No. 22 (DK 1863), which is also illustrated in Pl. LXXVIII, 14, though exceptionally well made is coated only with a thin cream wash. No. 23 (VS 711) shows the stem of a stand with pan and base restored. It has been coated with a light red slip.

The lustrous appearance of the red slips used on offering-stands is best exemplified by the stem (DM 1839) illustrated in Pl. LXXVIII, 14.

The intact stand No. 4 in Pl. LXXIX (SD 229) is also illustrated in Pl. LXXVIII, 8.

The very elaborate stem shown in No. 14 in Pl. LXXVIII (B 341) is ornamented with black lines in addition to being coated with a red slip. It is exceedingly well finished, and the stand, when whole, must have been a fine object.

[1] As evidence of Asiatic migrations into Europe, Professor Petrie has drawn attention to some European offering-stands with moulded stems. These offering-stands cannot, however, be closely compared with those of Mohenjo-daro or of Kish. In conception they are the same, but not in shape ; for, with one exception—a stand from Dura—two or more globes ornament their stems. It must be remembered, however, that the European stands are of very much later date than those of Mohenjo-daro. *Ancient Egypt*, pt. iv, 1928, pp. 102–3. Compare also some of the Mohenjo-daro stands with those associated with urn burials at Ādittanallur in Tinnevelly in southern India. *Ann. Rep. Surv. Ind.*, 1903–4, pl. lvii.

The small offering-stands, Pl. LXXIX, 6–8, are probably children's toys, though they are too well finished to have been made by the children themselves. All three are wheel-made and coated with a dark-red slip. No. 8 was found 3 feet below the surface of the ground in the space between Blocks 40 and 42, in the buildings west of the Great Bath.

It is uncertain whether No. 9 is really to be regarded as an offering-stand. It has a solid stem and base, of which the latter shows the focussed grooving caused by the stand being cut from the wheel by a cord. The pan is deep and has a small hole in its base that communicates with the centre of the stem. The vessel is hard-baked and has been badly twisted in firing.

The dish-like objects Nos. 11, 12, 13, 14, 15, 19, and 20 in Pl. LXXIX are all the pans of similar stands. They have been drawn to show the varying forms that occur. No. 14 comes from Chamber 76, Block 3, and No. 15 from Room 101, Block 8, L Area. According to their levels, both are of Late date.

Cannot yet be ascribed to any particular phase. At present it is impossible to ascribe the offering-stands found at Mohenjo-daro to any particular period. Examples of all three groups are found in the buildings of both the Late and Intermediate Periods of Mohenjo-daro. Nos. 2 and 3 of Pl. LXXIX, for instance, were found 12 feet below the surface of the ground, whereas No. 5 was only 5 feet below. The stands with moulded stems, however, seem to be of later date than the squat type, as they are nearly all found at an average level of 3 feet below the surface. But the depth below the surface is a very uncertain criterion in a greatly denuded site like Mohenjo-daro.

Fretted stems. In Pl. CXXXI, 43 (C 160), a fragment is shown of what is perhaps the stem of a large offering-stand. It is 0·5 in. thick and from its curvature seems to belong to a round piece of pottery about 6·4 inches in diameter. This might perhaps be too thick for the stem of an offering-stand and the object, therefore, may once possibly have formed part of a large pottery pedestal similar to some that have been found in Babylonia and dated there to the pre-Sargonic period. These Babylonian pedestals very closely resemble the present-day Indian reed *murhas* and were evidently copies of stands that were originally made of reeds.

The incisions in the Mohenjo-daro fragment, which is made of pottery of a light red colour, the clay of which was heavily mixed with sand, were roughly cut with a knife.

Metal stands. That offering-stands were sometimes made of metal is proved by the broken specimen illustrated in Pl. CXLI, 5. This was made in copper and bronze, and is described in Chapter XXV.

Brief History of Offering-stands.—The squat form of offering-stand had a very wide range in the ancient world. We meet with it in Elam [1] as early as the First Period of Susa. In Sumer it is found represented amongst the pictographs on the archaic clay tablets from Jemdet Nasr [2] and once in a seal impression on a tablet from the same site.[3] Further north it is known at Anau [4]; and west, it is common in Crete from neolithic times, but there it takes the form of a deep bowl set on a pedestal.[5] These squat offering-stands are very common in the second period of Hissarlik (*c.* 2600–2500 B.C.), and in early European sites, as, for instance, at Tordos in Transylvania belonging to the early Danubian Period (*c.* 3100–2600 B.C.), and in the valley of the Alt (*c.* 3000–2650 B.C.). In the Black Earth region they are found from 3100–2550 B.C.[6] The vessels from these places take more or less diverse

[1] *Mém. Dél. en Perse*, vol. xiii, pl. xi, fig. 4; pl. xii, fig. i.

[2] *Oxford Editions of Cuneiform Texts*, vol. vii, p. 17, No. 123; p. 43, No. 301.

[3] *Ibid.*, pl. xxxi, No. 119. It is interesting to note that one of the meanings of this sign given by Langdon is "pray" or "prayer".

[4] Pumpelly, *Explorations in Turkestan*, vol. i, pl. xi, fig. 6, and possibly fig. 4.

[5] Evans, *Palace of Minos*, vol. i, p. 58, fig. 17; p. 59, fig. 19. Possibly these were used only as food vessels.

[6] Peake and Fleure, *Priests and Kings*, pp. 147, 158, 163, etc.

shapes and do not always resemble the Indian forms. They usually have very deep bowls. There is, however, identity in shape between certain of the stands from Kish and Mohenjo-daro, as will be seen on comparing Pl. XI, 5, from Kish[1] with Pl. LXXIX, 3, of this work. With the possible exception of those found at Kish and Mohenjo-daro it seems likely that, as their deep bowls indicate, the squat form of stand was only used for household purposes, whereas the tall stands, as I shall indicate, probably had their sacred as well as profane uses.

Foreign offering-stands.

Tall stands with plain and moulded stems are known from Elam, Sumer, Crete, and Egypt. In Sumer, examples were found in every grave of the " A " Cemetery at Kish[2]; and when two people were buried together in that cemetery, as for instance, mother and child, two offering-stands were buried with them, the child's often being of small size. These examples from Kish date from *c.* 3000 B.C., but we have also a later example of an offering-stand on a fragment of the great stela of Ur-Nammu from Ur, which is dated to *c.* 2278–2170 B.C.[3] That offering-stands of this type were used at Susa is proved by the finding of one on a fragment of a bas-relief at Susa, a photograph of which taken from M. Babelon's book is shown in Pl. CLIX, 5.[4] In Crete, however, these stands do not appear until the M.M. I Period, when they frequently occur and are ornamented with designs in polychrome.[5] Evans calls them fruit-stands. In Egypt they were common in the eighteenth dynasty,[6] though it is probable that they were in use long before that time.

Uses of the Tall Offering-stands.—That the tall offering-stands were used for ritual purposes in Mesopotamia seems to be established by the care with which one of them was placed in every grave at Kish. And that they were also ceremonial vessels at Ur is certain from the bas-relief which shows Ur-Nammu making offerings to the deities Nannar and Nin Gal. In front of each of the deities there is a high offering-stand with a plant apparently growing or standing in it, which is being watered (?) by the king. Of earlier date is a calcite lunar disc, also from Ur, with a relief showing the daughter of Sargon of Akkad doing sacrifice. The scene is much mutilated, but there appears to be an offering-stand in front of her into which she is pouring something.[7]

Stand used for libations.

There is a clearer scene, again from Ur, on a limestone plaque of about the same date (*c.* 2700 B.C.), which shows a priest pouring libations into one of these stands before a seated figure of the god Nannar. In the register below, a priest is performing the same rite before the door of a shrine.[8]

Stand used at Susa.

From the fragment of a bas-relief found at Susa and referred to above, it seems that these tall stands were sometimes carried in the hand, possibly in processions. That the stand carried by the man of negrito type in this bas-relief is of the same type as some of those found at Mohenjo-daro is shown by its having a similar ball moulding at the top of the stand.[9] I do not know if stands of this form were used for ceremonial purposes in Crete—possibly not, as Sir Arthur Evans calls them fruit-stands—but they certainly were in Egypt, especially to hold offerings to the dead.

Possibly used for ritual purposes.

We may reasonably take the view that these larger stands, as well as the smaller, from Mohenjo-daro and Harappā were as likely to have been used for ritual purposes as for ordinary use.

[1] Mackay, *Report on the Excavation of the " A " Cemetery at Kish*, pt. 1.

[2] *Ibid.*, pl. xi and xii.

[3] *Antiquaries' Journal*, vol. v, pl. xlviii.

[4] Babelon, *Manual of Oriental Antiquities*, p. 323, fig. 247.

[5] Evans, *Palace of Minos*, vol. i, p. 184, fig. 133.

[6] For an example see *Ancient Egypt*, 1917, pt. 1, p. 12.

[7] *Antiquaries' Journal*, vol. vi, pl. liv.

[8] *Ibid.*, pl. liii, fig. *a*.

[9] Cf. with Pl. LXXIX, 21 and 23, of this work. It is not impossible that the figure carrying this stand is intended to represent a member of the Indus Valley population.

Offering-stands (Pl. LXXIX, 1–23)

Description of offering-stands.

No. 1 (HR 466). Well made offering-stand. The thin stem has a fluted top. Small undecorated pan. Coated with a pinkish slip. Light red porous paste. Level, 2 ft. 6 in. below surface. Room 13, House III, Block 2, Section A, HR Area.

No. 2 (HR 478). Offering-stand of squat type. Well made. Marginal portion of inside of pan ornamented with a looped design in black on a pink slip. Light red slip used in centre of pan. Light red paste rather porous and dirty. Level, 2 ft. 6 in. below surface. Room 13, House III, Block 2, Section A, HR Area.

No. 3 (VS 547). Offering-stand of squat type. Pan ornamented with broad, red, circular lines. Base similarly ornamented. Rather roughly made. Level, 12 feet below surface. Court of Structure XXVII, VS Area.

No. 4 (SD 229). Small offering-stand in nearly perfect condition. Well made. Coated with a pinkish slip. Also illustrated in Pl. LXXVIII, 8. Level, 10 feet below surface. Great Bath Section.

No. 5 (VS 1108). Offering-stand of squat type. Pan ornamented with thick, red concentric circles. Base also ornamented with broad red bands. Rather roughly made. Coated with a cream slip. Level, 5 feet below surface. S.W. corner of House XXVI, Block 4, VS Area.

No. 6 (HR 576). Very small stand. Coated with a dark-red wash. Well made. Level, 2 ft. 6 in. below surface. Room 13, House III, Block 2, Section A, HR Area.

No. 7 (VS 442). Very small stand which like No. 6 may have been a child's toy. Washed over with a dark-red slip. Level, 4 ft. 5 in. below surface. Room 4, House XXI, VS Area.

No. 8 (SD 2101). Coated with a dark-red slip. Carefully made. Level, 3 feet below surface. Great Bath Section.

No. 9 (C 3046). Small stand with solid stem and base. Latter has string grooves. Pan deep, with small hole in centre, which communicates with a small hole in centre of base. Has twisted slightly in firing. Level, 3 feet below surface. Chamber S.E. of No. 4, Block 8, Section C, DK Area.

No. 10 (VS 366). Stand of squat type with broad hollow base. Pan very shallow, ornamented inside with very roughly painted concentric red circles. Base also roughly ornamented with red lines. Level, 3 feet below surface. House XXXI, Block 6, VS Area.

No. 11 (HR 1153). Fragment of pan of offering-stand. Heavily coated inside and out with a thick red polished slip. Level, 2 ft. 6 in. below surface. House V, Section B, HR Area.

No. 12 (HR 596). Pan of offering-stand. Coated with a red wash inside and out. Fairly well finished. Level, 3 ft. 6 in. below surface. Court 18, House I, Block 1, Section A, HR Area.

No. 13 (HR 976). Pan of offering-stand. Inside coated with dark-red slip. Outside left plain and of rather rough workmanship. Level, 4 feet below surface. House I, Block 1, Section A, HR Area.

No. 14 (L 944). Pan and part of neck of offering-stand. Inside of pan coated with cream slip which has three concentric circles painted upon it in red. Each band or circle about 0·95 in. wide. Outside of pan not decorated; but top of stem ornamented with thick band of red. Just below surface of ground. Room 76, Block 3, Section D, L Area.

No. 15 (L 1192). Portion of pan of offering-stand. Coated with a bright red-slip inside and out, carefully polished. Very porous light-red ware. Level, 4 feet below surface. Space 112, Block 7, Section A, L Area.

No. 16 (B 341). Portion of stem of offering-stand. Coated with a red slip and ornamented with black lines. Light-red ware containing a great deal of grit. Exceptionally well finished. This stand when whole must have been a fine specimen. Level, 10 feet below surface. Chamber 2, Block 3, Section B, DK Area.

No. 17 (VS 3034). Pan missing. Well made. Coated with cream slip. Stem very much grooved inside. Level, 6 feet below surface. S.W. corner of House XXVI, VS Area.

No. 18 (VS 7915). Pan of offering-stand. Inside coated with a pinkish slip; outside has a polished red slip. Level, 2 feet below surface. Western side of court of Structure XXVII, VS Area.

No. 19 (HR 980). Pan of offering-stand. Inside coated with a pinkish slip. Decorated outside with a fluted pattern painted in red, white, and black on a cream slip. Owing to weathering, the pattern is unfortunately not clear enough to be traced. Soft, light-red paste copiously mixed with lime. Level, 4 feet below surface. Room 14, House I, Block 1, Section A, HR Area.

No. 20 (D 622). Pan of offering-stand. Coated inside and out with a dark-red slip, and ornamented with thin, black, concentric circles on the inside and thicker black lines outside. There is an inward projecting ridge about half-way down. Light-red paste containing grit and lime. Level, 3 feet below surface. Trench D (west).

No. 21 (VS 478). Fragment of stem and base of offering-stand. Coated with a very smooth, dark-red slip. Light-red paste containing sand and lime. Level, 12 feet below surface. Western side of court of Structure XXVII, VS Area.

No. 22 (DK 1863). Portion of stem of large offering-stand with moulded base. Very carefully made. Very porous, light-red ware containing a quantity of grit. Level, 6 feet below surface. Chamber 7, Block 12, Section C, DK Area.

No. 23 (VS 711). Neck and stem of offering-stand. Smoothly coated with a light-red slip. Thin for its size and very well made. Light-red paste mixed with a quantity of lime, but no sand. Level, 9 feet below surface. N.W. corner of House XXVII, VS Area.

Scored Pottery, Type B (Pl. LXXVIII, 1 and 5; Pl. LXXX, 1–8)

Common type. This type of pottery is more frequently found than any other. It always has a more or less pointed base, which with one or two exceptions is very badly made. The upper part of these jars is greatly superior in finish to the lower portion. They are all made of well-kneaded clay, sometimes containing a little lime, but rarely any sand. Most of them are washed over with a cream-coloured slip.[1] They have been given the name "scored pottery" because the middle portion was deeply scored with a spiral line when still on the wheel. The spirals vary in number from three to five. Most of these jars were deeply grooved inside by the fingers while on the wheel.

Use not understood. The use of these vessels is difficult to understand. Their badly formed, almost pointed bases preclude their standing on hard ground, and the rough and cheap nature of the ware

[1] This may not have been intended for a slip, but have been a clayey water used to finish off the jar.

makes it unlikely that special jar stands were provided for them. They recall the jars especially made in modern Egypt for water-wheels, to which they are tied at the neck and base.

This type of pottery seems equally common in the Late and Intermediate Periods of Mohenjo-daro.

Beakers, Type C (Pl. LXXVIII, 13 ; Pl. LXXX, 9–27)

Well-known type. This, again, is a common type of jar which varies slightly in form, but in all cases has a flat base showing the impress of the string by which the jar was separated from the wheel. Most of them are well made, considering that they were turned out by the hundreds. Though they are thin for their size, the inner surface frequently shows deep finger-grooving. The paste of which these beakers were made is light red in colour and well-kneaded, sometimes with the addition of lime. Very few are covered with a slip or wash, and when present it is perfunctorily applied. These vessels, whose flat bases make them very strong, were probably used as drinking cups. They are found in both Intermediate and Late levels, but more commonly in the former. The beaded bases of Nos. 23 and 24 are unusual.

Jars with Pedestal Bases, Type D (Pl. LXXVIII, 18 ; Pl. LXXX, 28–34)

Ring-bases. This type of jar is also fairly common. A number of them have ring bases, but more usually the broad and substantial base is moulded. In nine examples out of ten, jars of this type are coated with a red slip. Some are made of ordinary clay, but the great majority are made of a well-levigated paste which burns a dark-pink colour. No difference can be detected between the specimens found at Intermediate level and those in the upper Late level. They are too well made to have been used for cooking, and by reason of their broad shape they would be inconvenient to lift to the mouth for drinking. Possibly they were used for holding semi-solids.

Description. No. 28 (SD 1049). Wide flat base showing string grooving. Coated with fine, red slip which had once been polished. Thin for size. Clay of a light-red colour and of a finer quality than was used for the ordinary pottery. Level, 5 feet below surface of ground.

No. 29 (L 911). Except for underside of base, is entirely coated with a polished red slip. Base very finely moulded. Found in Court 69, Block 3, Section D, L Area. Late Period.

No. 30 (L 849). Made of clay that has been heavily mixed with sand. Coated with a red slip that does not appear to have been polished. Base is flat, and not ring-shaped, as is usual with these vessels. From the region marked 70, Block 3, Section D, L Area. Late Period.

No. 31 (SD 354). Well-made jar with ring base. Inside smoothly finished, but outside especially so, being coated with a red slip that has been polished horizontally. Made of a yellow paste of a porous nature that had been mixed with a little sand. Level, 5 feet below surface.

No. 32 (DK 3108). Ring base. Outside surface smoothly coated with a red slip polished horizontally. Level, 3 feet below surface. Chamber 15, House IV, Block 2, Section B, DK Area.

No. 33 (VS 2917). Flat base scored with concentric circles. Thin, pink-coloured paste of a very fine texture. Formerly coated with a red slip, which has now practically disappeared. Level, 5 feet below surface. Room 52, House XII, Block 2, VS Area.

No. 34 (HR 5668). Ring base. Jar entirely covered with polished red slip including inside of rim. Found in Space No. 92, east of House XXXIX, Block 5, Section B, HR Area. Level, 5 feet below the surface.

Ledge-necked Jars, Type E (Pl. LXXX, 35–7)

Uncommon ware. This type is uncommon at Mohenjo-daro. It has been so named on account of its differing in the shape and height of its neck from all the rest of the pottery found at the site. Each jar seems to have been made in two pieces which were joined together where the neck touches the shoulder. These vessels are generally the natural colour of the pottery, but they are sometimes coated with a cream slip. In every example of the type not only the base, but also the lower portion of the sides of the jar had been pared down and trimmed with a knife.[1] From the levels at which these jars are usually found, they appear to belong to both the Intermediate and Late Periods. They are somewhat similar in shape to a certain type of pottery found at Kish, except that the base is flat instead of ring-shaped.[2]

Description. No. 35 (HR 5821). No slip. Lower surface uneven and dragged. Found in an old dump in HR Area.

No. 36 (HR 2842). Clay heavily mixed with sand and lime. The lower outer surface of this jar would seem to have been trimmed with some instrument while on the wheel. Base shows string grooves. Traces of a cream slip. Found in the main street of HR Area at a depth of 4 feet below the surface.

No. 37 (HR 5722). Roughly coated with a cream slip. Lower surface of jar including base has been roughly trimmed. Found in Room 61, House XXXI, Block 5, Section B, HR Area, at a level of 7 feet below surface.

Ribbed Pottery, Type F (Pl. LXXVIII, 4 ; Pl. LXXX, 38–42 ; Pl. LXXXVI, 1)

Rare type. Ribbed pottery is far from common ; only a very few examples have been found up to the present. This type is characterized by the presence of a raised rib round the shoulder of the jar, and is also peculiar on account of the rounded base, a feature that is rarely seen at Mohenjo-daro. Owing to the rarity of this type of jar, each specimen that has been found is separately described :—

Description. No. 38 (HR 2426*g*). Very thin, red ware with a slight admixture of lime. Very carefully polished, bright-red slip, which extends from rim down to level of ribbing. The remainder of the jar is coated with a pink slip. A similar type of jar is shown in Pl. LXXXVI, 1. Level, 10 feet below surface of ground. Room 126, House X, Section B, HR Area.

No. 39 (C 3086). Rounded base which has been roughly pared with a knife. Rib or beading at junction of shoulder and body. Rim and beading painted dark red. Neck and shoulder painted light red. Ware salmon-colour, with a slight admixture of lime. Level, 3 feet below surface.

No. 40 (VS 191). This is a very thin, beautifully made little vessel with a flat base showing string grooving. The rim and neck are coated with an exceptionally well-finished

[1] A similar trimming with a knife is also a feature of some of the Cretan pottery ranging in date from E.M. II to M.M. I. Evans, *Palace of Minos*, vol. i, pp. 74–5.

[2] Mackay, *Report on the Excavation of the "A" Cemetery at Kish*, pt. i, pl. xiii, type C.

red slip down to the level of the beading. The slip also extends down inside the neck, a refinement not often seen. Level 3 ft. 6 in. below surface.

No. 41 (VS 3174). Very thin ware, beautifully finished inside and out. No slip. Level, 6 feet below surface. Room 66, House XXVII, VS Area.

No. 42 (DK 1220). Rounded base roughly pared with a knife. Surface of upper portion very dragged and striated. Coated with a cream slip. Level, 7 feet below surface. Chamber 8, Block 2, Section C, DK Area.

Knife trimmed. Nos. 39 and 42, whose bases were trimmed with a knife, show that round-based vessels were not finished bottom upwards on the wheel. Doubtless the base was turned on the wheel as far as was possible with the jar in an upright position, and when it was detached from the column of clay, the remains of the latter that were left on the jar were pared away with a knife. This procedure seems to have been more convenient than reversing the jar on the wheel to smooth the base.

Vase-like Jars, Type G (Pl. LXXVIII, 13 ; Pl. LXXX, 43–70)

Usual type. Jars of this type are found very frequently. The base is always flat, showing the score marks of the string used to separate the jar from the wheel, except in No. 70, which has that rare feature at Mohenjo-daro, a ring base. The design painted on this jar is reproduced in Pl. XCI, 13.

Scoring. Occasionally the jars of this type are decorated with a scored line (Nos. 59–62). Their finish varies considerably. In some the surface is left plain ; in others it is thinly covered with a wash ; while some are heavily coated with a slip. All these jars are of light-red ware with a fairly well-finished outer surface, but sometimes very rough inside.

Small Beakers, Type H (Pl. LXXXI, 1–10)

Common type. This type also occurs plentifully on the site, usually in the upper levels. Some are so small that they look more like toys than jars intended for actual use. They are nearly always very roughly made, and rarely have a slip or even a wash.

Tall Vases, Type I (Pl. LXXXI, 11 and 12)

Not frequent. These jars, which are thick for their size, are somewhat rare. Both inner and outer surfaces are smooth, but the flat base is marked by the scoring of the string. No. 11 (DK 1887) has no slip, but a thick dark-red coating makes No. 12 (DK 1764) a very handsome vessel. Their beaded bases are also seldom seen in the pottery of Mohenjo-daro. No. 11 was found 5 feet below the surface in Chamber 4, Block 15, Section C, DK Area, and No. 12 6 feet below ground in the lane between Blocks 3 and 4, Section B, DK Area. Both vessels were cut from the wheel with a cord.

Narrow-mouthed Ware, Types J and Ja (Pl. LXXXI, 13–17)

Vary in shape. These two types are far from common, and the few specimens found vary considerably in shape. No. 13 is a well-made, thick-rimmed jar, coated with a fine, red slip. Level, 6 feet below surface. Street between Blocks 2 and 3, Section A, DK Area.

Description. Nos. 14 and 15 (VS 3642*a* and *b*) have small, flat bases showing string grooves. They also are heavily coated with a light-red slip, which is smoothly laid on, but shows no polish marks. Both these jars are light for their size. They are included in the large group of pottery (Pl. LXXXVI, 3–17) which was found in Room 37, House I, VS Area, at a level of 6 feet below the surface.

Type Ja.—No. 16 (HR 1093), which is of substantial make and covered with a red slip, has a wide flat base showing string grooves. The internal diameter of its neck is exceptionally small, only 0·2 in. Level, 3 feet below surface. Outside N.W. corner of House I, Block 1, Section A, HR Area.

No. 17 (HR 465) has an exceptionally wide flat base marked with string grooves. It is coated with a pinkish slip, upon which animals, etc., were painted in a purplish-black colour. Unfortunately, the design is so weathered that it has proved impossible to copy or to photograph it. Level, 2 ft. 6 in. below surface. Room 13, House II, Block 2, Section A, HR Area.

It is difficult to say for what purpose this type of ware was used. Scented oils might well be kept in such vessels, as their narrow mouths would permit of their being easily sealed. Again, they would be eminently useful for fine powders, which could be poured out when required.

Narrow-stemmed Jars, Type K (Pl. LXXXI, 18–20)

Rare type. This type of pottery is rarely found. In some respects it resembles Type B, but the jars are better made and the narrow foot is quite stem-like.

Description. No. 18 (SD 2483) is coated with a dark-red wash. The ware of which it is made contains a rather large proportion of lime. No attempt was made to polish its exterior, which is, however, well finished. Found lying at a depth of 3 feet below surface, on a rough pavement in Block 4 (No. 4), south of the Bath building.

The narrow base of No. 19 (SD 590) shows string marks. This jar, which is smoothly coated with a fine, red slip, is well made and finished. Level, 8 feet below surface.

No. 20 (L 891) is rather roughly made and its narrow base is slightly concave. It is coated with a dark-red slip, upon which black bands have been painted. Level, 5 feet below surface. From Court 69, Block 3, L Area. Late Period.

Wide-shouldered Jars, Type L (Pl. LXXVIII, 10 and 18 ; Pl. LXXXI, 21–6)

Usual type. This type of jar, which has been so named because the breadth at the shoulder exceeds the height, is frequently found at Mohenjo-daro. The depths at which these jars lie vary from 1 ft. 8 in. to 10 feet, and they belong to both the Intermediate and Late Periods.

Description. A peculiarity of this type of ware is the careful finish of the upper part of the jar as compared with the rough striated appearance of the lower portions. The upper portions of Nos. 21, 22, and 23 are coated with a fine, red slip, the remainder being merely covered with a rough, red wash. The red slip extends a little below the shoulder of the jar, where it ends off with a rough and irregular edge. Every specimen of this type of jar shows string marks on its base.

No. 26*a* (VS 27) differs in form from the rest of the type. With the exception of its elongated base, it is entirely coated with a red wash.

Narrow-based Bowls, Type M (Pl. LXXXI, 27–31)

These bowls are but rarely found.

No. 27 (VS 720 *gg*) is a well-made piece, which was first coated with a light-red slip. **Description.** The upper portion was then painted dark red, and upon it lines of a still darker red were added. Level, 9–13 feet below surface. Chamber 1, House XXXI, Block 6, VS Area.

Nos. 28 and 29 (VS 441*a* and *b*) are two bowls that were found together. Each has a stem-like base recalling those of Type K. They were washed over with red paint which has become very powdery. Level, 4 ft. 6 in. below surface. Room 4, House XXI, Block 4, VS Area.

No. 30 (SD 1640*a*) has a flat, beaded base. Its upper portion is well finished, but the lower portion was left somewhat rough. It is coated with a cream-coloured slip. Level, 2 feet below surface. Found with No. 5, Pl. LXXXI.

No. 31 (DK 138) was made by hand and is very rough and thick. Its upper portion was once coated with a rough, red slip, most of which has now disappeared. Level, 1 ft. 6 in. below the surface. Street between Blocks 2 and 3, Section C, DK Area.

Type N (Pl. LXXXI, 32)

Of this type, for which it is difficult to find a name, only one example has been found up **Rare type.** to date. Its roughly finished lower portion is curiously shaped, the sides being markedly concave from below the level of the widest part. The small, flat base shows the grooves formed by cutting the jar from the wheel. The rounded upper portion of this jar is coated with a very smooth red slip of an unusually dark tint. Level, 5 ft. 6 in. below the surface. It would seem that the lower part of this vessel was intended to fit into something. Trench D (west) DK Area.

Small Painted Ware, Group O (Pl. LXXXI, 33–40)

This kind of ware, which is remarkable both for its small size and very careful finish, was **Description.** probably made to contain scented fats or the like ; the wide mouths of these little jars would allow of a substance of this nature being easily extracted. There is a certain amount of variation in form, but the jars are all coated with a smooth red slip, on which fine black lines are carefully painted. Usually, only the upper portion of the jar is thus decorated. No. 36 (VS 1938) is exceptional in being covered with a cream-coloured slip and decorated with deeply scored lines. This type of ware is as common in the Intermediate as in the Late Period.

No. 33 (HR 2287) was found in Room 127, House X, Section B, HR Area at a depth of 12 ft. 8 in. below the surface.

No. 34 (VS 2475) comes from House XXIII, Block 4, of the VS Area, where it was found 3 ft. 6 in. below the surface.

No. 35 (VS 920) was recovered from the N.E. corner of Structure XXVII, VS Area, where it was lying at a depth of 4 feet below the surface.

No. 36 (VS 1938) came from 6 feet below the surface, from the S.E. corner of House XXXV, VS Area.

No. 37 (HR 1409) was unearthed from the space between Houses III and VI, Block 2, Section A, HR Area, at a depth of 7 ft. 6 in. below the surface.

No. 38 (VS 2991), from 4 feet below the surface, south of House XXX, VS Area.

No. 39 (VS 720 *y*) was found in a cesspit at the southern end of Lane 5, close to House XXVII, VS Area.

Heavy-based Ware, Type P (Pl. LXXVIII, 19; Pl. LXXXI, 41–5)

Thick bases. Common in Late Period.

These jars are very similar to those of Type K in some respects. But in the latter type the base is narrower. This ware is fairly common—in the Late Period more so than in the Intermediate Period. The characteristic thick and lumpy bases are as a rule very roughly shaped. Another striking feature is the deep finger-grooving on the outside as well as the inside of the jar. It seems probable that these jars were turned out in large quantities and that but little attention was paid to their finish. They are mostly coated with a thick, cream slip. The best-finished jar is No. 43, but even this has a somewhat undulating surface. Jars of this type were cut from the wheel with a string. Nos. 41, 42, and 45 (L 829, 847, 927) all come from Region 70, Block 3, Section D, of L Area, from Late levels. No. 43 (SD 448), which is also illustrated in Pl. LXXVIII, 19, was found in Block 5 of the Southern Buildings Section at a depth of 4 feet below the surface. No. 44 (HR 5872) was recovered from the lane between Houses LII and LVI, Blocks 7 and 8, Section B, HR Area, at a level of 6 feet below the surface.

Bowls, Type Q (Pl. LXXXI, 46–9)

Bowls not plentiful.

Plain bowls like these are far from plentiful at Mohenjo-daro. From the levels at which they were found, they seem to be confined to the Late Period. As a rule they are well finished, the hard-baked, light-red ware being made of a paste which was sometimes mixed with lime, but not with sand. The outer surface is usually smooth, but slightly undulating, and the inner surface heavily grooved by the potter's fingers. These vessels are always thickly covered with a cream slip.

Nos. 46 (L 1128), 47 (L 1018), and 49 (L 865) were all found in Region 70, Block 3 of the L Area, at levels ranging from 1 foot to 3 feet below surface. The last-named bowl was hand-made.

No. 48 (VS 2705), also of hand work, comes from House IX, Block 2, VS Area, where it was found at a depth of 7 feet below the surface.

Goblets, Type R (Pl. LXXXI, 50–2)

Unusual type.

This type of pottery, which has a characteristic tall, solid base, is somewhat rare. In size and certain other respects it resembles Type K, but the base is markedly different. It also has features in common with the much larger jars of Type S. These goblets are usually coated with a smooth, cream-coloured slip and the inner surface shows marked finger-grooving. They are found in both Late and Intermediate levels.

No. 50 (HR 1874) was found in House II, Block 2, Section A, HR Area, at a depth of 6 feet below the surface, and Nos. 51 and 52 (C 3008, *a* and *b*) were found together in the chamber immediately west of Room 4, Block 2, Section C, DK Area, at a level of 4 feet below the surface.

Jars with Flared Mouths, Type S (Pl. LXXVIII, 11; Pl. LXXXI, 53–60)

Well-known type.

This is a very common type of jar which is found in levels of both the Intermediate and Late Periods. In every case the flat substantial base is scored by a string. As a rule these jars are somewhat thick in make, with the inner surface very heavily grooved by the potter's fingers. The smooth outer face is coated with either a wash or a slip of white or

cream colour. No. 53 differs from the rest of the type in having a slightly beaded base. The flared mouth and graceful appearance make this a particularly attractive jar.

No. 53 (VS 2716). Small, flat base showing string grooving. Slight beading around base. Heavily marked inside with potter's fingers. Outside smooth and coated with a cream slip. Level, 7 ft. 6 in. below surface. Room 105, House XVI, Block 2, VS Area. **Description.**

No. 54 (VS 1674). No slip. Lower part of jar bears traces of dragging, upper portion smooth and even. Pronounced finger-grooves inside. Level, 3 feet below surface. North of House XXV, Block 4, VS Area.

No. 55 (VS 2672). Outside surface very smooth and washed over with a cream-coloured slip. Made of a red paste plentifully mixed with sand. Level, 7 ft. 6 in. Room 44, House XXV, Block 3, VS Area.

No. 56 (HR 5704). Smooth outer surface covered with a cream-coloured slip. Heavily grooved inside. Lower part of vessel is unusually thick. Level, 3 feet below surface. Room 13, House LVII, Block 8, Section B, HR Area.

Nos. 58 and 59 (VS 3648) were found together with another jar of the same description in Room 37, House VI, Block 1 of the VS Area, at a depth of 6 feet below the surface. Both the examples illustrated are coated with a thin, cream wash.

No. 57 (HR 4861) more nearly approaches a cylindrical form, and is coated with a thick, cream slip. Level, 4 feet below surface. Room 21, House VII, Block 2, Section B, HR Area.

No. 60 (VS 3652) is a debased form of this type of vessel, which has lost its graceful curves, but attained a more useful base. It was recovered from Room 37, House VI, Block 1 of the VS Area, from a depth of 6 feet below the surface.

Miscellaneous Shapes, Group T (Pl. LXXXII, 1–12)

Owing to the difficulty of assigning them to any particular types, a varied assortment of large jars is here grouped together. **Description.**

No. 1 (DK 1242) is of light-red ware with a heavy admixture of lime. The surface of the jar has been rubbed smooth, but has no wash or slip. Level, 6 ft. 9 in. below surface. Chamber 8, Block 2, Section C, DK Area.

No. 2 (VS 2111*b*) has very fine sand mixed with the clay. Its surface is coated with a cream wash. Level, 3 feet below surface. House XXVI, Block 4, VS Area.

No. 3. The surface of this jar is coated with a cream slip. The level at which it was found is not known.

No. 4 (VS 31) is covered with a thick slip of a slightly pinkish tint. Level, 4 feet below surface.

No. 5 (SD 1640*b*). The upper part of this jar is well finished, but its base was trimmed with a knife, of which the marks are clearly seen.[1] It is grooved on the inside, and the outside is covered with a cream-coloured slip. This jar was found together with the bowl illustrated in Pl. LXXXI, 30, at a level of 2 feet below the surface.

No. 6 (HR 5161) is coated with a cream slip. It was formerly decorated with lines of a purple-coloured paint, which has almost entirely scaled off. Level, 6 feet below surface.

No. 7 (VS 303). The lower part of this jar, which is of an attractive shape and decorated with a line scored round the widest part, has been pared with a knife; indeed, the base was actually shaped in this manner. The upper portion of the jar is well finished and coated

[1] This is also seen in much of the pottery of Jemdet Nasr.

with a rough, red wash. A little sand and lime were mixed with the clay of which the jar was made. Level, 9 feet below surface. Western side of courtyard of House XXVII, Block 6, VS Area.

No. 8 (DK 1223) is a striking-looking, wide-mouthed vessel, ornamented with red lines upon a cream-coloured slip. Found in Chamber 8, Block 2, Section C, DK Area, at a level of 6 ft. 9 in. below surface.

No. 9 (DK 2782). The upper portion of this vessel is better finished off than the lower portion, while the inner surface is exceptionally smooth. It is decorated with a design painted in black on a pink slip (cf. Pl. XCII, 6). Level, 5 feet below surface. Room 4, Block 2, Section B, DK Area.

No. 10 (VS 3647) is one of the group illustrated in Pl. LXXXVI, 16. It is coated with a dark-red slip which has nearly disappeared through weathering. Level, 6 feet below surface. House VII, Block 1, Section A, VS Area.

No. 11 (VS 95) is a very curious vessel, but ugly in shape with a very wide, flat base. Both its inner and outer surfaces are very much grooved. It is coated with a cream slip. Level, 3 feet below surface.

No. 12 (VS 1571*b*). This jar is most unusual. It is a large vessel, whose inner surface is heavily finger-grooved and outer surface very rough. The curiously abrupt slope away of the base should be noted (cf. No. 32 in Pl. LXXXI). It is coated with a cream slip. Level, 8 feet below surface. Courtyard of House XXVII, Block 6, VS Area.

Dishes, Type U (Pl. LXXXII, 13 and 18)

Dishes. Curiously enough, not many dishes have been found at Mohenjo-daro, for what reason it is difficult to say. Indeed, it is uncertain whether vessels such as Nos. 13 and 14 were dishes or jar-covers ; they could be used equally well for either purpose. All the dishes found are roughly made and very rarely covered with a slip or wash. They are never painted. The same shapes are known in both the Intermediate and Late levels.

Basins, Type V (Pl. LXXXII, 19–30)

Basins. The bowls found vary considerably in shape, as our illustrations show. In No. 19 (SD 246) we have the simplest form with almost straight sides, and those which follow become gradually more complicated in shape. The simpler, rougher types are generally devoid of a slip or wash, but the better finished examples nearly always have a coating of some kind. It is very rare indeed to find a painted bowl, but No. 24, though roughly made, has a design painted in violet-brown on the natural surface of the pottery (Pl. XCI, 24). It seems probable that these vessels were used for food.

No. 19 (SD 246). Very roughly made, well baked but twisted in firing. Base rough and looks as if it had been torn off the wheel. Adhering strongly to the inside is a substance resembling red ochre. Level, 3 ft. 6 in. below surface. Great Bath Section.

No. 20 (L 878). Simple form with flat base showing string grooves. Well made and coated with a cream slip. Exceptional in the carefulness of its make. Found in Chamber 79, Block 3, Section D, L Area. Late Period.

No. 21 (L 874) should have been included amongst the jar-lids. From the roughness of its make this object appears to be hand-made. Court 69, Block 3, Section D, L Area. Late Period.

No. 22 (L 91). Thin for size and well made. Coated with an unpolished light-red slip. Space 121, Block 7, Section A, L Area. Late Period. **Description.**

No. 23 (HR 2442). Well-made basin roughly painted in red and black, the colours being scrabbled together. Found at a level of 10 ft. 4 in. in House X, Section B, HR Area.

No. 24 (HR 1298). Well-made vessel coated with a smooth, cream-coloured slip. Base marked with string grooves. Level, 7 feet below surface. House II, Block 2, Section A, HR Area.

No. 25 (VS 1934). Well made and coated with a thin, cream wash. House XX, Block 2, VS Area, from a depth of 18 inches below the surface.

No. 26 (HR 741). Flat base showing string grooves. Fluted rim, which on the inside is ornamented with two lines set close together, painted in purplish black on a cream-coloured slip. Level, 3 ft. below surface. Section A, HR Area.

No. 27 (VS 404). Of rather coarse make. Inside and upper part of outside coated with a cream slip. A considerable amount of lime has been mixed with the clay of which this vessel is made. Level, 9 ft. below the surface in Room 65, House XXVII, Block 5, VS Area.

No. 28 (DK 2644) bears the sign pictured in Pl. XC, 4, painted in black on the outside. The base of this vessel is strongly marked with grooves made by a string. The inside of the utensil is coated thinly with a red slip which has been carefully smoothed. Light-red ware containing a little sand and lime. Level, 5 ft. below surface. Room 12, House VII, Block 3, Section B, DK Area.

No. 29 (DM 166). Thin ware for its size. Coated with a thin, cream-coloured wash inside. Level, 4 ft. 6 in. below surface. Stūpa Section, DK Area.

No. 30 (L 1060). Somewhat roughly-made basin with a flat, uneven base marked with string grooves. The outer surface of this vessel is very rough indeed, suggesting that it had been first moulded in another bowl sprinkled with sand, a process that is carried on at the present day near Mohenjo-daro. No slip. Level, 1–3 ft. below surface. Region 70, Block 3, Section D, L Area. Late Period.

Pans, Type W (Pl. LXXXII, 31–5)

The members of this group are distinguished from those of Type V by their shallowness, which is associated in most cases with a very wide, flat base. They are not so common at Mohenjo-daro as one would expect. As utensils of this kind would not have been carried about, they would have been but little subject to breakage ; in consequence we find hardly any broken or discarded specimens. **Pans.**

No. 31 (VS 3639*a*) is a very fine pan, comparatively thin for its size. It is coated inside and out with a thick, carefully polished, dark-red slip. It is made of a well-kneaded clay, baked hard to a light-red colour. Level, 6 ft. below surface. **Description.**

No. 33 (HR 2286). This pan is exceptionally well finished both inside and out. Its fabric is a light-red colour, coated with a dark, ash-coloured slip. Level, 12 ft. below surface. Room 127, House X, Block 2, Section B, HR Area.

No. 34 (VS 3639*b*) was found with the large group of pottery of which No. 31, which it resembles in make, was also a member (Pl. LXXXVI, 3–17).

No. 35 (VS 791*a* and *b*). This pan is coated with a cream slip on the outside, and inside with a dark-red wash. The paste of which it is made is light red in colour and contains a certain admixture of dirt, which is probably accidental. Level, 2 feet below surface. Court of House XXVI, Block 6, VS Area.

Of the five pans illustrated, two have slightly concave bases. Though this concavity may be intentional to allow of the pans gripping the floor, it might quite well be due to warping. All the pans bear evidence of the wheel, but it is possible that they were first hand-made and then put on a wheel for a final trimming up, as is done in the adjacent villages at the present day.[1]

Use. These large shallow pans were probably used for mixing and kneading dough. They were probably also used to hold the querns, so that in the process of grinding no flour would be wasted.[2]

Jar-covers, Type X (Pl. LXXVIII, 7 ; Pl. LXXXII, 36–55)

Jar-covers common. Jar-covers are found in large numbers. They occur at every level and are especially common in the Late Period. They vary from the roughest to the finest finish, and are of plain as well as painted pottery ; in the latter case they are usually decorated with black lines on a red slip.

Classification. These covers fall into two groups ; those with a lid-like appearance (Nos. 45, 46, 47, 55, etc.), and those like a dish with a projection in the middle, by which they can be lifted. The first group is by far the more numerous ; and both hand-made and wheel-made specimens occur.

Comparison with foreign ware. The jar-lids of the second group are more interesting, for identical lids were found at Jemdet Nasr in Mesopotamia, associated with painted pottery which has been provisionally dated to about 3500 B.C. Up to the present, jar-covers of this kind have not been found at any other period in Mesopotamia, nor to my knowledge do they occur among the antiquities of any other country[3] except India, where they are common in the historical period. In Sind, lids of identically the same form are still used to cover jars; and they are also used as a pivot to revolve a jar with the left hand while it is being painted. It was probably also used for this latter purpose in ancient Sind and in Mesopotamia.[4]

Description. No. 44 (SD 1918), which is made of a light-red ware without a slip, is a very unusual shape, and No. 53 (L 1097) is unique. The latter is made of a clay that has been plentifully mixed with sand and lime and is light red in colour. Its upper surface and the knob are coated with a light-red slip ornamented with circular black lines.[5] Found just above the pavement of No. 34, Block 4, Section C, L Area. Intermediate Period.

No. 55 (VS 2961) is the most elaborate form of lid that has as yet been found, and the level at which it was unearthed shows it to belong to the Late Period. Its paste is light red in colour, and it has neither slip nor wash. Level, 3 feet below surface. Room 4, House VIII, Block 2, VS Area.

Those covers that resemble dishes, e.g. Nos. 48 and 52, were probably used for that purpose also. Jar-covers of the form shown in No. 45 have also been found made in stone, metal, faience, and shell at Mohenjo-daro. A common form, but rare as regards the material of which it is made, is illustrated in Pl. CLVI, 6, and described in Chapter XXVIII.

[1] "Painted Pottery in Modern Sind," *J.R.A.I.* vol. lx, p. 132.

[2] A clay figure of a woman apparently grinding corn in a pan has since been found at Harappa.

[3] I have since noted an example from South Italy, dated to the Bronze Age. See Peet, *Stone and Bronze Ages in Italy*, p. 407, fig. 210 (h). The handle on the side of the Italian specimen was used probably for hanging it up ; it could hardly have had another use.

[4] See *J.R.A.I.* vol. lx, p. 132, fig. 3.

[5] The modern examples in Sind are frequently thus decorated.

Fluted Pottery, Type Y (Pl. LXXVIII, 12 ; Pl. LXXXIII, 1 and 2)

This type of pottery, which is quite uncommon at Mohenjo-daro, is characterized by being deeply grooved. No. 1 (HR 5550) is of a very porous, light-red ware heavily mixed with sand and devoid of any slip or wash. The base is flat and appears in places to have been trimmed with a knife. Though the inner surface of the jar is quite smooth, the outside is very heavily fluted. No. 2 (DK 245) only differs from No. 1 in being coated with a cream slip. The first vessel was found in House LV, Block 7, Section B, HR Area, at a depth of 3 feet below the surface, and the second at a level of 18 inches in Section C, DK Area.

Both these vessels were found at a high level and belong, therefore, to the Late Period. The fluting that decorates them is not spiral, but continues at the same level around the jar. **Fluting.** What they were used for it is difficult to say, but an expensive oil or semi-liquid substance is suggested by the width of their bases which would prevent the jars from being easily upset.[1]

Cylindrical Ware, Type Z (Pl. LXXXIII, 3 and 4)

Only two examples have as yet been found of this variety of jar. No. 3 (VS 206) has a **Rare type.** wide, flat base showing string grooves. It is very heavily grooved inside by the potter's fingers and somewhat roughly finished outside. It has no slip. House XXVI, Block 5, VS Area.

No. 4 (VS 1633) resembles No. 3 in every way, except that it is straighter-sided and is covered with a cream-coloured slip. Both these jars seem to belong to the Intermediate Period, as they were found, though not together, at a level of about 5 feet below the surface. Chamber south of Room 61, House XXVI, VS Area.

Scored Pipkins, Type AA (Pl. LXXXIII, 6–8 ; Pl. LXXXVI, 12)

This kind of jar, which is not often found at Mohenjo-daro, resembles Type B in some ways, but has a more serviceable base.

No. 6 (VS 3638) was found inside the large jar illustrated in Pl. LXXXVI, 14. It has **Description.** a very small, flat base with string grooves. The outside of the jar is smoothly coated with a pink slip, and five deeply scored lines serve as a decoration. Level, 6 feet below surface. Room 37, House I, VS Area.

No. 7 (HR 5089) is slightly twisted through overfiring. Its flat base has been grooved by a string. It is covered with a cream-coloured wash and decorated with four scored lines. Level, 13 feet below the surface. Room 114, House XI, Block 2, HR Area.

No. 8 (HR 5321). The lower part of this vessel is very roughly made, though its upper portion is well finished. Seven shallow lines decorate the shoulder. There is no slip or wash. Level, 5 feet below the surface. Room 41, House XXIX, Block 5, HR Area.

From the different levels at which these three pipkins were found, we must conclude that they belong to both the Intermediate and Late Periods.

Miscellaneous Painted Jars, Group AB (Pl. LXXXIII, 9–12)

Nos. 9, 11, and 12 are remarkable for the height of their necks, a very unusual feature **Painted ware.** in the Mohenjo-daro ware ; in this respect they resemble Nos. 35–7 in Pl. LXXX.

No. 9 (DK 1293) is made of a clay, now a light-red colour, containing an admixture

[1] A very similar jar, both in form and technique, was found in the "A" Cemetery at Kish. Mackay, *A Sumerian Palace and "A" Cemetery at Kish*, pl. liv, No. 27.

of sand and lime. Its flat base shows the usual grooving. It is somewhat roughly coated with a cream slip, upon which bands, purplish-black in colour, have been painted. Level, 6 feet below surface. Room 5, Block 6, Section C, DK Area.

No. 10 (VS 1022). With the exception of its lowest portion, No. 10 is covered with an unpolished, bright-red slip upon which black bands are painted. The vessel, instead of being the usual light-red clay, was made of a light-grey clay containing a good deal of fine sand. The flat base shows the usual grooving. Level, 3 ft. 6 in. below surface. S.E. corner of House XXXIV, Block 7, VS Area.

No. 11 (E 413) is a tall, vase-like jar somewhat similar in type to Nos. 11 and 12 in Pl. LXXXI. It is beautifully made and is ornamented with black lines on a red slip. Found 3 ft. 6 in. below surface in trial trench E, DK Area.

No. 12 (DK 1217). The upper portion of No. 12 has a smooth finish, but the lower part is very striated and dragged. On its cream slip a number of close-set bands were painted in light red. Level, 7 feet below surface. Room 8, Block 2, Section C, DK Area.

Handled Cups, Type AC (Pl. LXXVIII, 9 ; Pl. LXXXIII, 13–27)

Handles. This type of ware is very interesting, for its characteristic feature is the only kind of handle that was used at Mohenjo-daro, as far as we know at present, with the exception of the long, flat handle shown in No. 26. Save for Nos. 16 and 22, all the cups belonging to this type are hand-made, and vary considerably in size.

The lugs were made of flat pieces of clay, averaging 0·45 in. thick, which are perforated with a small hole averaging 0·15 in. in diameter. This hole in some cases looks remarkably like the eye of an animal, and it may be that some of the handles were especially shaped to resemble an animal's head.

In those cups which have definite bases, a knife has evidently been used to trim away the surplus clay. As a rule, they were left the natural colour, but No. 18 is coated with a cream slip.

The purpose of these utensils is not yet known. The smaller ones, especially, would hold very little liquid. They may have served for the pouring of libations. Or possibly they were used as lamps, for which purpose they seem well suited ; none of them, however, shows any trace of blackening. The large number of whole specimens found is probably accounted for by their thickness.

Spout. No. 20 (D 383) has a spout instead of the usual handle.[1] It is one of the only two examples of spouted vessels that have as yet been found at Mohenjo-daro. It is a hand-made oval cup of rough workmanship, and a knife was clearly used in an attempt to trim the inner edge of the rim. It was recovered at a depth of 18 inches from trial trench D, DK Area. The spout is missing from the second spouted cup (HR 5959), and it has, therefore, not been drawn, especially as in other respects it resembles No. 20. It is possible that this curious vessel was used as a feeding cup. **Comparisons.** A vessel very similar in shape is known from Nubia.[2] In a cairn in the Kurnool District of Madras, Mr. Longhurst found a vessel very like the one under discussion,[3] and a gold feeding cup from the grave of Queen Shub-ad at Ur is made on the same lines.[4] Further afield we have another comparison in the shape of a spouted feeding cup from Anau[5]; and, lastly, an almost identical cup to the one found at Mohenjo-daro is

[1] Cf. with the stone vessel seen in Pl. CI, 18.

[2] *Arch. Surv. of Nubia*, 1910–11, pl. xxv (c).

[3] *Ann. Rep. Arch. Dept., South. Circ.*, 1914–15, pl. xx (b).

[4] *Antiquaries' Journal*, vol. viii, pl. lxx.

[5] Pumpelly, *Explorations in Turkestan*, vol. i, pl. ix, fig. 1.

known from the Italian Bronze Age but is said to be a lamp.[1] We have as yet found no definite lamps at Mohenjo-daro, and it is as well to state once more that not one of these spouted vessels shows any signs of blackening.

No. 26 (VS 3023) was very roughly made on a wheel and coated with a cream slip. Its flat, projecting handle is about three-quarters of an inch wide. The clay of which it is made is light red in colour and has a small proportion of sand mixed with it. Level, 7 ft. below surface. Room 70, House XIII, Block 2, VS Area.

Levels. This handled ware is found at depths ranging from 2 to 12 feet below the surface. It may, therefore, be regarded as of Intermediate date, extending into the Late Period. The spouted cup, No. 20, was found 2 ft. 6 in. below the surface and its broken counterpart 7 feet below, i.e., at the average level of the Intermediate Period.

No. 13 (C 1352) was found at a depth of 9 feet in the street between Blocks 1 and 2, Section C, DK Area, and No. 21 (C 2019) at the depth of 2 feet in Room 4, Block 5, Section C of the same area. No. 27 (C 3156) comes from Room 5, Block 2, Section C, DK Area, where it was found 8 ft. 6 in. below the surface.

Suspensory holes. The holes in the handles of these little vessels are in most cases too small to allow of their being directly hung up on a peg or nail in the wall; in fact, if they were really intended for use and not for mere ornament, a string must have been used. They may have been hung up in the vicinity of a water-jar.

Dating. It is interesting to see that handles were as rare in ancient Sind as they were in Mesopotamia at about the same period. At Jemdet Nasr numerous examples of handled ware were found, ranging from perforated lugs to well-formed strap and twisted cord handles, all belonging to the painted pottery period, but in the pre-Sargonic cemetery at Kish, which approximates in date with the higher levels of Mohenjo-daro, the handle is entirely missing, unless we are to regard as handles the curious ornamented projection that occurs on one type of jar only. Why such useful things as handles should have almost entirely dropped out in Mesopotamia, it is difficult to explain. It will be interesting to see if vessels with proper handles are found in the lowest levels of Mohenjo-daro, as I personally suspect that they will be. The handle, as apart from perforated lugs and ledges, is absent in the earliest pottery from Egypt. It first appears, if my memory serves me aright, in the First Dynasty, though very rarely, and continues until the Fourth.

Grey Ware, Group AD (Pl. LXXXIII, 28–43)

Carbonaceous matter. The series of jars and dishes in this group are all made of a light-grey or dark-grey clay, about the composition of which there is nothing remarkable except that it shows no trace of carbon or burnt material. In both the Near and Middle East, dung was frequently mixed with the clay in making pottery of this kind to darken it, a process still followed in parts of southern Palestine; and it is reasonable to conclude that the same method was adopted at Mohenjo-daro, unless a natural grey clay was available.[2] This same ware has been found in abundance in southern Balūchistān (probably its home), as well as in Sīstān and at Jemdet Nasr, and it is said to have been found in Honan.

Polish. Most of the jars illustrated were carefully rubbed down, a process which had the double effect of darkening the surface and at the same time making the jar more water-tight. The

[1] Childe, *Dawn of European Civilization*, p. 261, fig. 127.

[2] Dr. Hamid now explains that the colouring is due to the presence of ferrous iron. As much as 7·73 per cent of ferrous oxide has been obtained from the surface of a sherd (DK 2519) of this dark-coloured ware.

polishing of this ware, though fine, does not, however, equal the very fine polish on the food-bowls of the Kushān period.

Levels. As is shown by the variety of levels at which it occurs and the many shapes—jars, dishes, bowls and offering-stands—the use of this grey paste, whether natural or artificial, was not confined to any particular type or period.

Nos. 31 and 33 form part of the group of pottery (III) illustrated in Pl. LXXXVI, 20–6, found at a depth of 11 feet below the surface of the ground in Chambers 14 and 15, Block 4, of the Southern Buildings Section.

Jar-stands, Type AE (Pl. LXXVIII, 10 and 18; Pl. LXXXIII, 44–60; Pl. CLVII, 56)

Stone as well as pottery. Jar-stands are found in large numbers at Mohenjo-daro. They are usually made of a light-red pottery, but they also occur in stone—mostly alabaster (No. 54, Pl. CI, 33 and 36). They vary considerably in size, and are found at all levels. These stands are in most cases coated with a cream slip. Some of the better-made ones, however, have a red wash or a thick, red slip, and are in some cases ornamented with black lines. A minute jar-stand (0·7 in. high), found in the L Area and belonging to the Late Period, has a red and black lozenge pattern painted on a white slip (Pl. CLVII, 6). Jar-stand No. 53 was found lying on broken masonry between Block 40 and the western enclosure wall of the Great Bath at a level of 3 feet below the surface. It probably belongs to the Late Period. Stand 58 comes from the open space, 91, in Block 9 of the L Area. It can be definitely dated to the Late Period.

It is uncertain whether Nos. 55 and 56 were used as jar-stands or for some other purpose. The base of No. 55 is extremely thin and the aperture at the top, which is rather smaller than the diameter of the base, has broken edges. The inner surface of this piece is deeply grooved by the potter's fingers, but the outer surface is smooth. It was found at a level of 9 feet below the surface in Block 2 of the Southern Buildings Section.

No. 56 resembles No. 55, except that it is coated with a cream slip. It was found in the same Block as No. 55, but 6 feet below the surface. A number of these curious objects were found in the SD Area. In every case, the base is exceedingly thin. Sometimes it appears to be accidentally broken, but in other cases the edge of the break has been carefully smoothed over with the fingers, leaving a large irregular aperture. It is possible that these two specimens (Nos. 55 and 56) were intended to be jar-stands, but that they were made in this way to avoid turning them over on the wheel to work their bases.

Before leaving this type, attention should be paid to No. 52, which is a plate-like stand of very unusual shape, which may conceivably have been an offering-stand. It is made of a light-red clay, without slip, and is especially important as its base is marked with the two signs seen in Pl. XC, 7.

Limestone stand. The limestone jar-stand (HR 519) illustrated in Pl. CLVII, 62, must have been intended for a jar of very large size. It is well made and quite a presentable object. Its surface is smooth but unpolished. It measures 9·85 inches high and 19·3 inches in diameter. Found in the lane between Houses I and IV, Section A, of the HR Area, at a level of 3 ft. 6 in. below the surface.

No. 60 in Pl. LXXXIII comes from Block 3 of the Southern Buildings Section, from a depth of 7 feet below the surface.

Heaters (?), Type AF (Pl. LXXVIII, 20 ; Pl. LXXXIV, 3–18)

This type of ware is found in considerable quantity at Mohenjo-daro, but it is almost invariably broken owing to the weakening due to the perforations. It is noticeable that the majority of these vessels are tall and cylindrical in form ; dish-like specimens are very rarely found. Despite the extreme roughness of their make, they were all shaped on the wheel, as is shown by the string grooving on their bases. They are generally made of a porous paste which burns red in colour and which sometimes contains a little lime or sand, or both. Occasionally they are coated with a cream slip. They are as common in the Intermediate as in the Late Period.

Holes. The holes vary slightly in size to suit that of the vessel. They were made by pushing a stick through the damp clay from the outside, and thus a burred edge is left on the inside of the hole. As a rule, the stick was pushed in at right angles to the jar, but on occasion the work was carelessly done. In most cases, one or more holes of a larger size were punched in the base, the arrangement usually being a large central hole with a number of smaller holes around it.

Nos. 9 and 11 are very roughly made by hand with very thick sides and base. There is one large hole in the centre of the base and a number of smaller holes are arranged in a single row around the sides. Both were found in Block 3 of the Southern Buildings Section, the first 18 feet and the second 16 feet below the surface.

Purpose. These vessels I would regard as heaters rather than strainers.[1] Similar ware is a common feature of the ancient pottery of Babylonia, especially in very early times, though it does not resemble that from Mohenjo-daro in shape. It has been suggested that these jars were used in Babylonia for straining milk, which seems to have been an important item of diet amongst the Sumerians, but our examples can hardly have been used for this purpose.

Storage Jars, Group AG (Pl. LXXVIII, 17 ; Pl. LXXXIV, 19–25 ; Pl. LXXXV, 1–8)

Classification. The storage jars found at Mohenjo-daro are mostly in pieces ; and in some cases so many fragments are missing that it is impossible to restore them. They can be grouped into two main classes :—

(1) Squat jars with large mouths.
(2) Tall jars with narrow mouths.

Base. In every example, with the exception of No. 22, the base is entirely inadequate for the jar to stand alone. Nor have any jar-stands been unearthed of sufficient size to hold such large vessels. We have found, however, that they were generally supported by laying ordinary bricks around their bases.

Owing to the interest of these jars and to the fact that they have rarely been unearthed in such numbers on other ancient sites, the following details are appended.

Details. No. 19 (VS 125). Inner surface hardly shows any grooving. Outer surface smooth and heavily coated with a red slip, upon which are painted wide, black, horizontal bands in pairs. Level, 4 ft. 3 in. below surface. Found in Lane 3, beneath south wall of Room 25, House XIX, Block 3, VS Area.

[1] Sir Aurel Stein has found identical utensils at some of the chalcolithic sites of Makrān. A large, complete vessel of this kind was found on a site near Awārān, containing remains of charcoal and ashes. It seems probable, therefore, that perforated vessels of this kind were used for heating and perhaps for cooking.

No. 20 (HR 4812). A large bowl well-finished both inside and out. Indications of a thick, brown coating on the outside may be remains of bitumen used to make the jar waterproof. Level, 1 ft. 6 in. below surface. Street between Houses IV and VIII, Blocks 1 and 2, HR Area.

No. 21 (HR 4598). A large, wide-mouthed bowl. Inner surface smooth, outer surface thinly coated with a light-red slip, on which are painted wide, brownish-black lines arranged in couples. Late Period. Level, 2 feet below surface. Space between buildings XLVIII and XLIX, HR Area.

No. 22 (HR 3986). A large pan with thin, flat base. Outer surface very striated; inside better finished. Just below the rim a line of small holes, averaging 0·3 in. in diameter, was made by pushing a stick through from the outside, which left a burr round the inner edge of each hole. This pan must certainly have been intended for water, which the holes kept from exceeding a maximum depth. Level, 2 feet below surface. Room 7, House XVIII, Block 4, HR Area.

No. 23 (VS 3398). A well-made vessel with no slip or wash either inside or out. It shows a rare form of decoration, four horizontal grooves that were made with a cord.[1] Level, 4 feet below surface. House I, Section B, VS Area.

No. 24 (HR 2281). A very large, wide-mouthed vessel with a carinated rim. The outside is coated with a dark-red slip and decorated with thick, black, horizontal lines in pairs. Level, 12 ft. 8 in. below surface. Room 128, House X, Section B, HR Area.

No. 25 (L 240). This fine vessel is thickly covered on the outside with a dark-red slip, upon which black lines were painted. Found in Chamber 118, Block 7, Section A, L Area, at a depth of 2 feet below the surface.

Pl. LXXXV, 1–8

No. 1 (HR 565). Well-finished inside and out. The outer surface is coated with a cream slip. Level, 3 feet below surface. West of Houses II and III, Block 2, Section A, HR Area.

No. 2 (VS 3641). Badly weathered. Covered outside with a dark-red slip, upon which a few black bands have been painted. Level, 6 feet below surface. House VII, Section A, VS Area.

No. 3. This was found many years ago; in what area has not been recorded. It is well finished inside and out, but is badly weathered. It seems once to have been covered with a red slip which has now practically disappeared.

No. 4 (VS 3329). Coated with a thick, red slip and decorated with wide, black lines in pairs. Level, 3 feet below surface.

No. 5 (SD 2688). Coated on the outside with a cream-coloured slip. Unusual shape, with well-made rim. Both inner and outer surfaces well finished. Decorated with grooved line a little above base. Level, 4 ft. 6 in. below surface.

No. 6 (D 287). This is a magnificent jar which is also seen in Pl. LXXXVII, 4. It is one of the few painted jars that were found whole, and its size makes it a very striking object. The inside of the jar is deeply marked with finger-grooves; the outside is adorned with designs painted in horizontal registers on a red slip. It was found in the Late level. The decoration on this jar is described in detail later on. Found in trial trench D, DK Area, at a level of 4 feet below the surface.

No. 7 (E 671). A well-made jar with smooth outer and inner surface. It is undecorated

[1] It is possible that a cord was used to prevent the cracking of this vessel when drying.

and has no slip. The tapering base is unusually tall and narrow. Level, 2 ft. 6 in. below surface. Trial trench E, DK Area.

No. 8 (VS 3638*a*). This is a very large jar which seems to have been covered with a thick, black slip, possibly bitumen, to make it water-tight. Its long incurved tapering base is very unusual. Level, 6 feet below surface. Room 37, House I, VS Area.

Water-jars. The jars with pointed bases (Pl. LXXXV, 3, 7, 8) were probably used for water. Jars of similar shape are used at the present day in both India and Mesopotamia for the purpose of filtering water, a smaller vessel being placed below the base to catch the drops as they filter through. A wooden stand is used to support these water-jars and to raise them a sufficient height above the ground. There is no reason to doubt that similar stands were used for the pointed jars of Mohenjo-daro.[1]

Dégraissants. All these large vessels are made of a clay that burns light red and which is more porous than the ordinary pottery. In most cases there is a heavy admixture of sand in the paste, and sometimes of lime. Sometimes the paste was mixed with lime without the presence of sand.

Quality. In most respects these large storage jars of Mohenjo-daro are quite unlike those of ancient Babylonia. They are better made and of superior clay, besides being better baked. The notching and notched ribbing that is so common on the ancient ware of Mesopotamia is entirely lacking in the pottery of Mohenjo-daro.

Method of manufacture. There are slight indications that these jars were first built up from a number of strips of clay and then placed on the wheel for a final truing up. This process is followed in Sind at the present day in the manufacture of large, wide-mouthed jars and pans.[2]

Knobbed Ware, Type AH (Pl. LXXVIII, 16)

Knobs. This type of ware is very rarely found and is most unusual in its technique. The first jar (HR 3121) in the illustration is wheel-made and 3 inches high. It is a light yellow, sandy-looking paste, coated with a light-grey slip evidently intended to simulate faience. The knobs were put on very carefully, one by one, and the vase seems subsequently to have been immersed in the slip. Owing to the knobs being so regular in size and arrangement, one is led to think that they were applied to the jar by the aid of a small tube. They are made of the same material as the vase itself. Found in Room 95, House XIII, Block 2, Section B, HR Area, at a level of 3 feet below the surface.

The second vessel (DK 2360) is similar in every way, except that it is of a different shape and is considerably smaller, measuring 2·5 inches high. Level, 6 feet below surface. Chamber east of No. 6, Block 2, Section B, DK Area.

The third vase (HR 4768), which is 3 inches high, is of a porous, light-red paste. It has not been coated with either a slip or wash, nor were its knobs so carefully stuck on as in the other two jars, or so regularly shaped. Several are missing through not having adhered properly. Found at a depth of 3 feet below the surface in House XII, Block 2, Section B, HR Area.

Comparisons All these vases are wheel-made, and belong to both the Intermediate and the Late Periods, for we have lately found an example that certainly comes from the former level. Nothing like the decoration of this ware has been found elsewhere in the early East, except in Crete. In that island the same kind of knobbed ornamentation was found on jars of the M.M. III period from the palace pottery stores of the palace of Knossos, but the knobs are not set so

[1] The large limestone jar-stand in Pl. CLVII, 62 shows, however, that these large pottery vessels were sometimes supported by other stands than wooden ones.

[2] *J.R.A.I.* vol. lx, p. 132.

closely together and they are confined to the shoulders and handles of the jars. Sir Arthur Evans suggests that the knobs on the Knossos articles were intended to imitate rivet heads. I certainly cannot agree to this in the case of the Mohenjo-daro pottery.[1] In later times the nearest approach to this knobbed pottery is the ware called "Barbotino", which was only made in Europe in Roman times about the second century A.D.[2]

Analysis.

An analysis by Dr. Hamid of a sherd of exactly similar ware (DK 2424) is given below :—

	per cent
Silica	54·09
Alumina	16·89
Ferric Oxide . . .	5·46
Ferrous Oxide . . .	2·49
Lime	16·18
Magnesia . . .	4·59
Water (Combined) . .	1·09
Total .	100·79

Dr. Hamid remarks "This is pottery and not faience. The colour is due to ferrous iron which is present in the form of complex silicates."

Groups of Pottery (Pl. LXXXVI, 1–26)

The three large groups of pottery illustrated in Pl. LXXXVI are invaluable for dating purposes. Groups such as these are rarely found at Mohenjo-daro, but until we come across a cemetery—if one exists ?—we shall be dependent on the meagre information afforded us by groups of pottery that are few and far between.

Intermediate Period groups.

Group 1.—Group 1 was found in the L Area to the south of the stūpa. The smaller jar was lying inside the larger one, in the S.E. corner of Chamber 112 well below the foundations of the Late wall on the east of the chamber at a level of 4 feet below the surface of the ground. There seems no doubt, therefore, that these jars belong to the Intermediate Period.

Group 2.—Group 2, a very large one, was found during the season 1926–7 in Room 37, House I, VS Area, at a level of 6 feet below the surface. As all the walls of this chamber were of the Intermediate Period, this group must also belong approximately to that time.

Group 3.—Group 3 comes from Chambers 14 and 15, Block 4 of the SD Area. From the great depth at which it was found, 11 feet below the surface, and the fact that the walls of the chamber are of Intermediate date, this group must belong to the same period.

[1] Evans, *Palace of Minos*, vol i, pp. 566 and 567, fig. 413. In the last example, which is the clay figure of a female, the knobs are set very close together, exactly as are those on the pottery of Mohenjo-daro. Mr. Wainwright informs me that very much the same ware, of Neolithic age, is known in Malta. *S. Liverpool Annals of Archæology*, iii, 1910, pls. v and vi. A similar kind of decoration is also found in the Danubian 1*a* pottery (Childe, *Danube in Prehistory*, pp. 36 and 232), the Neolithic pottery of Italy (Peet, *Stone and Bronze Ages in Italy*, pl. ii, 7), the Swiss Lake dwellings (*Antiquity*, vol. ii, p. 396), and the Middle Bronze Age of Great Britain (Childe, *Bronze Age*, p. 188, fig. 10).

[2] In Sind this ware survived down to the Kushān period, for we have found coarsely made examples of it in the upper levels of the mound at Jhukar, a few miles from Mohenjo-daro. It has also been found by Stein in Khotan. *Ancient Khotan*, vol. ii, pl lxxiv.

Inscribed Pottery (Pl. LXXVIII, 2; Pl. XC, 1–7)

With the exception of the three signs found on some pieces of early pottery, illustrated in Pl. XC, 3, 4 and 7, and sundry seal impressions shown in Pls. LXXVIII, 1 and 3, and CXV, 558–60, no other examples of inscribed pottery have as yet come to light at Mohenjo-daro, excepting four sherds of the Kushān period. These last were found close to the surface of the ground in the Stūpa area. Their inscriptions are reproduced in Pl. XC, 1, 2, 5, and 6. **Kushān pottery.**

No. 1 (DM 177). Inscribed in Brāhmī characters written in ink. The inscription mentions "the gift (*deyadharmma*) of". The name is missing.

No. 2 (DM 197). Incised in Brāhmī characters. Two letters and the remains of a third yield the word *bhadata*, or "mendicant".

No. 5 (SD 2685). Incised in Brāhmī characters. This broken inscription bears the name *Bhatanamdi*, who was either the donor or owner of the vessel. A photograph of this inscription is seen in Pl. LXXVIII, 2.

No. 6 (DM 177). Brāhmī characters written in ink. Owing to the fading of this inscription, it cannot be deciphered with certainty.

Both the sherds Nos. 1 and 6 are of medium thickness. They are a light-red ware, hard baked, and uncoated with a slip. The paste contains a great deal of sand and lime, and a high proportion of mica.

No. 2 is thick, coarse ware with an incised decoration just below the rim, consisting of a narrow band of small triangles cut in the clay. The ware is light red in colour, hard baked, and contains a great deal of lime.

No. 5 is made of a light-red paste with which has been mixed a large quantity of dark-coloured grit that resembles powdered basalt. I have found pieces of very similar ware, of late date, in Babylonia. For certain uses this method of mixing basalt with the clay for large vessels was to be recommended, as they could be highly fired without risk of any cracking or warping in the kiln.

Stereotyped Forms of Unpainted Pottery

With the exception of one or two types, the unpainted pottery of Mohenjo-daro is somewhat uninteresting. The stereotyped simplicity of most of the shapes gives one the impression that the civilization which produced them had long been established, so that experiments in shape and technique had been discontinued.

Similarities between the pottery of Mohenjo-daro and that of ancient Sumer are the exception rather than the rule. For instance, the projecting beading that is so common in the pre-Sargonic ware of Mesopotamia—the result of making a jar in two pieces and fitting them together at the junction of the shoulder and the body—is extremely rare in the pottery of Mohenjo-daro.[1] The only examples that have been discovered are on the jars illustrated in Pl. LXXX, 38–42.

Another type of jar from Mohenjo-daro that does approximate closely to an early Sumerian form is that shown in Pl. LXXXIX, 2. Its squatness and the sharp angle between its shoulder and the body, together with the fact that it is painted, bring this vase closely into line with some of the painted jars found at Jemdet Nasr and with the corresponding ware of Elam.[2] From the broadness and flatness of their bases, it is evident that vessels of this shape

[1] This beading is produced by flaring out the upper edge of the body of the jar for the shoulder to rest upon it. This flared edge is then bent over and united to the shoulder portion. To make the joint quite firm the resulting beading was sometimes notched with the finger-nail, which also served to make it ornamental.

[2] *Mém. Dél. en Perse*, t. xiii, pl. xix, fig. 1.

were intended for use on hard level floors, on which they would not be liable to be easily overturned.

Pottery for water-wheels (?).

I have a strong suspicion that the jars illustrated in Pl. LXXX, 1–8, that have been denominated "scored pottery", were made for attachment to an appliance for raising water very similar to the wheel that is used in most parts of the Near and Middle East at the present day. This type of vessel is far more frequently found at Mohenjo-daro than any other type and is invariably very roughly made. The deep grooves around the middle of these jars are well suited for lashing them to a wheel, as indeed is the shape of the base and perhaps of the rim. We are faced, however, with the difficulty that in India the water-wheel is known as the "Persian wheel", which suggests that it was introduced from that country. If it had been in use in India from a very early date, it would probably have had some other name.[1]

It is more than probable that some arrangement for drawing water for irrigation, by means of an endless rope working over a wheel, with pottery vessels attached to it at intervals, was in use in Sind and other parts of western India from very early times, though it may not have taken the form of the modern wheel. The latter may have been an improvement introduced into India from Persia.[2] The use of the so-called Persian wheel is almost exclusively confined to Balūchistān, Sind and the Panjāb, and some parts of the Bombay Presidency.

Painted Pottery

Perfect pieces rare.

A considerable quantity of painted pottery has been found at Mohenjo-daro, mostly in fragments. There were very few perfect or semi-perfect pieces; in fact, the latter can almost be counted on the fingers of one hand. This pottery comes from various levels, and that from the uppermost level apparently differs but little in style and manufacture from the pottery of the earlier periods. But until we have a bigger range from the lower levels we cannot speak with certainty on this point.

Large vessels.

The majority of the sherds are of quite thick ware, in some cases nearly half an inch in thickness. Their curvatures show that they once belonged to jars of considerable size. Up to the present we have not found any pieces comparable with the thin, fine ware that is so common in the lower levels at Susa, at Nāl in Balūchistān, and in Sīstān.

Description of paste.

Nature of the Ware.—The paste of which the painted ware is made is a very carefully kneaded, light clay which on being fired turns a light salmon-red in colour. Under a glass of moderate power the paste appears as a rule to be slightly sandy; a natural character of the clay, and not artificial. Of some 150 fragments that have been closely examined, it was found that in forty lime was mixed with the clay as a dégraissant,[3] and in twenty-one there was an admixture of sand, whose particles were fine and rounded. Eight sherds of those examined had both sand and lime mixed with the clay of which they were made.

Thirteen fragments, exclusive of those containing sand, were heavily charged with dirt, charcoal, etc. These materials would have served the same purpose as sand or lime, but it must not be lost sight of that they may have been accidentally picked up by the clay, if it was kneaded on a dirty floor.

In this frequent use of a tempering material the painted pottery of Mohenjo-daro agrees with that of Jemdet Nasr, most of which was heavily charged with dégraissants, chiefly

[1] Another difficulty in the way of Mr. Mackay's suggestion is that numbers of these vessels were found round the heads of small public wells, where there was no room for a wheel and probably no need for a constant stream of water; e.g., in HR Area, B Section, House XLIII. Cf. p. 205 *supra*.—[Ed.]

[2] The modern Indian water-wheel is exactly the same as that used in Egypt at the present day.

[3] The lime used was sometimes in the form of very fine particles. It was evidently very carefully ground.

sand and lime, and the Susian pottery whose paste in the Second Period was always mixed with lime. No conclusions, of course, can be drawn from this, except that the potters of Mohenjo-daro had to temper their clay, as they do at the present day.[1]

Mica. Sometimes mica occurs in the paste, and, if so, in large quantities. It was also probably used to temper the clay, as is done with the same material at the present day in Sind ; it occurs in the sand of the bed of the Indus, whence it is gathered by washing.[2]

Grey ware. A scarce grey variety of pottery (Group AD, Pl. LXXXIII), of medium thickness, is known at Mohenjo-daro. Its paste, untempered with either sand or lime, has a curious soapy feeling. The surface of this ware is always very carefully polished, but has no slip. When decorated, which is but seldom, red paint alone was employed. The designs are the same as those on the ordinary pottery.[3]

Baking. In the majority of cases the baking of the painted pottery was very good. Some pieces are so hard that they almost ring. It is rarely that we find badly baked ware either amongst the painted or the unpainted pottery.

Classification. The painted pottery of Mohenjo-daro can be conveniently divided into two groups :—

(*a*) Pottery adorned with simple lines painted on the natural surface of the jar, or on a wash or slip.

(*b*) Pottery on which designs and motifs are painted, usually on a wash or slip.

(*a*) *Pottery Decorated with Simple Lines.*—The jars so adorned range in size from under one inch to four feet or more in height. The most frequent form of decoration is simple horizontal bands, varying in width according to the size of the jar. These were painted on the natural surface, or on a wash or slip according to the finish of the vessel. On the smaller jars, especially models, these lines were carefully drawn ; but this is not always the case with large storage vessels, the lines on which vary greatly in width in different places around the jar. These horizontal lines, or bands, as I prefer to call them, appear to have been applied with a cloth[4] rather than with a brush ; there is no doubt, however, that a brush was used in the case of the smaller vessels.

Washes and slips. *Slips.*—Before dealing with the second group of painted pottery, we must consider the nature of the various slips used. On most of the painted jars the decoration was applied over a wash or slip. Washes were on the whole rare ; they are distinguished from slips by the surface of the jar showing through them in places. It is not certain whether a wash was in all cases intentionally applied ; the appearance may have been caused merely by the potter moistening his hands in the last stages of shaping the jar in order to smooth it down. The water used for a wash was heavily charged with levigated clay, which may or may not have been a slightly different colour from the paste of the jar itself. It would also tend to burn a slightly different hue in the furnace.

The primary intention of a wash or slip was to close the pores of a vessel to render it more water-tight. In the course of time it was found of use to provide a smooth surface upon which to paint a design.

Colours of slips. The slips used at Mohenjo-daro were of four different colours : buff, cream, pink, and red. It is possible that the first two colours were levigated clays from various localities, since the tints are natural ones. The pink slip varies from just a slight tinge to a definite

[1] This clay was doubtless, as now, obtained from the fields surrounding the city.

[2] It is generally found in the pottery of Mohenjo-daro in conjunction with sand and more rarely with lime.

[3] A similar grey ware, but unpainted, is known in the pre-Sargonic period at Kish. It is also very common in the prehistoric ware from Honan in N.E. China.

[4] Probably a rag tied to the end of a piece of stick.

colour. It may also have been a natural clay containing a trace of iron, the resulting colour being due to firing rather than to an artificial admixture of colour. In the deeper pinks, however, a dash of red would certainly appear to have been purposely mixed with the slip.

Red ochre. The red slip was made either by mixing red ochre with clay or by using the ochre itself. This slip is invariably thick and the same colour right through to the surface of the jar. In most cases it can be peeled off, especially if the surface of the jar has been corroded by salt. In two cases only out of over a hundred specimens examined was the colour of the surface of a jar due to a red wash having been applied over a neutral-coloured slip instead of being mixed with it.

Tints. Red slips are of two shades, i.e. light and dark red. It is possible that a change of tint was caused by the firing of the vessel, and that the light-red slip was originally a yellow ochre which was converted into red ochre by burning. In fact, the modern makers of painted ware in Sind use yellow ochre as a slip and it subsequently burns to a bright red. The dark-red slip, on the other hand, is undoubtedly a red oxide which is little changed by the action of fire. The dark-red slip frequently contains a little mica, and in this respect as well as in colour it resembles the slip used in the painted pottery of Jemdet Nasr.

Polish. Many of the slips show signs of having been polished. It is probable that all the red slips were so treated, though in some cases the polish has been removed through long contact with salty soil. The polishing appears to have been done either with a smooth pebble or a piece of bone, in some cases so carefully as to produce quite a lustrous effect. In other cases the polish lines, which are always horizontal, are more or less distinct instead of merging with one another.

Bi-coloured slips. On one fragment of pottery (SD 2687) two coloured slips, a cream and a red, were used: the red for the neck of the vessel and the cream as a ground for the design.[1] In another case (D 287), we find a definite dark-red slip used in conjunction with a light-red slip (Pl. LXXXVII, 4).

Slips reserved to certain places. Sometimes only those parts of the jar that were to be painted were covered with a slip, the lower part of the vessel being left either the natural colour of the pottery or merely covered with a thin wash. The junction between the slip and the untreated portion of the jar was concealed by painting a black line over it.

We have found two examples of a red wash applied to a light-coloured slip. This procedure is a very obvious one, and is readily recognizable even by the casual eye. Moreover, when such sherds have been subjected to the action of salt, the wash is apt to become powdery ; in one case it has almost entirely disappeared.

Black paints. *Paints.*—The colour most commonly used in decorating pottery was black, a manganiferous haematite.[2] Most of the painted pottery found at Mohenjo-daro was in monochrome; that is, excluding the slip, one colour only was used in painting the designs. This colour, though generally a warm, dense black, sometimes has a brownish or distinctly purplish hue.[3] The surface is always dull, except in two cases where a slight polish suggests the possible admixture of some medium (DK 700 and HR 1655). In only a very few cases is there any evidence that the surface of a jar was polished or rubbed down after it had been painted. The lines of the designs are always flush with the surface, showing that the paint was applied in a sufficiently liquid state to permeate a little below the surface.

In painting jar HR 1422, two colours, black and dark red, were used on a cream

[1] Also found in the Jemdet Nasr ware.

[2] This substance is used for painted pottery in Sind at the present day. *J.R.A.I.* vol. lx, p. 320.

[3] Dr. Hamid tells me that the precise colour produced on burning a mineral containing both iron oxide and manganese dioxide depends upon the relative proportions of the two constituents.

ground, and, excluding the slip, the decoration of this jar would be more correctly described as bichrome (Pl. XCI, 6).

Red paints. For some unknown reason, red was hardly ever used in monochrome decoration, except for colouring the slip.[1] Why this should have been so, it is difficult to say, for it was commonly used for this purpose in the painted pottery of other countries.[2] And it was rarely used in the painting of the simple bands around the larger storage vessels.

Polychrome ware. Of polychrome ware very few examples occur at Mohenjo-daro. The two jars (one, VS 3092, is illustrated on Pl. LXXXVII, 2), which were found at a level of 4 feet below the ground in the VS Area, were first of all coated with a thick, smooth, cream slip. A very conventional floral pattern was then painted on this ground, the petals being outlined in black and left the colour of the slip, and the intervals filled in with red paint. Though the two jars were of the same size and shape and evidently made by the same potter, the designs upon them and the arrangement of the colours differ slightly. A very similar decoration appears on the outside of a portion of the pan of an offering-stand (Pl. LXXXVII, 3) (HR 980), and a minute jar-stand (L 245) is also painted in this way (Pl. CLVII, 6). This last was found at a Late level in Room 103, Block 6, of the L Area.

Green colour. On some very small polychrome sherds traces of a green colouring-matter have been found which becomes very powdery when dry and is easily rubbed off. It is suspected that the four pieces of polychrome ware just described were also once ornamented with this colour. Some clods of green earth found both at Harappā and Mohenjo-daro (HR 1194) were thought to be the material from which this green paint was prepared, and Sir Edwin Pascoe examined these samples for us. His report will be found in Chapter XXXII on the metals and minerals found at Mohenjo-daro. Unfortunately, we are not yet certain that the green earth examined by him was the actual substance used on the polychrome ware, for we have not yet been able to procure sufficient quantities from the painted ware itself for analysis. What seems to be the same pigment frequently occurs on the painted pottery found by Mr. Hargreaves at Nāl, where, too, it is never well preserved.[3]

Colour materials. The red paint used in polychrome and other ware is a red ochre and the white is gypsum.[4] The black is the same as that used on the ordinary painted pottery. No definite yellow paint was used, though some of the white pigment has yellowed slightly in the course of time. In this as well as in other respects, this polychrome pottery differs from that of Jemdet Nasr and Musyān. White or yellow, red, and black on a cream slip are the four colours that alone were used at the former site.

It is possible, of course, that after extended and deeper digging more examples of this interesting polychrome ware will be found. That the four examples described above belong to the Late Period is indicated by the levels at which they were found and the very conventionalized character of their decoration.[5]

Use of brush. In the smaller vessels the lines of paint were applied with a brush, as is clearly seen in most of the examples, especially where the paint has been applied to the natural surface of the pottery. The lines are thick at first owing to the fullness of the brush, and thin out later as

[1] Excepting on the grey ware.

[2] It is possible that red oxide was somewhat rare. Yellow ochre could hardly be used in place of red oxide as, though it would subsequently burn a red colour, there would be little contrast at first between it and the clay to which it was applied.

[3] *Mem. Arch. Surv. Ind.*, No. 35, p. 36.

[4] A white paint made from burnt stag's horn is used in Sind at the present day to decorate pottery.

[5] Since this was written, we have penetrated to a very considerable depth over a large area. Our experience up to the present goes to show that polychrome ware is only to be found in the upper levels.

it dried. How these brushes were made we do not know, but a present-day potter of Sind uses a double brush made of hairs taken from the shoulders of a donkey. One end of the brush is long and fine, the other coarse and thick.

Painted pottery forms.

Forms of Painted Pottery.—Unfortunately very few perfect specimens of painted pottery, other than those decorated with plain bands, have been found at Mohenjo-daro. Nor has it been possible to restore with certainty the original shapes of the jars from the fragments found. It is impossible, therefore, to say more than that the shapes already found do not in any way resemble the painted ware hitherto found in Persia or in Mesopotamia, nor do they resemble the painted ware found by Mr. Hargreaves at Nāl, which more or less approximates to the pottery of the first period of Susa. Indeed, it seems to me quite unlikely that we shall ever find at Mohenjo-daro, except possibly in the lowest levels, any of the shapes that are so common amongst the ancient and allied potteries of Persia and Mesopotamia. The tendency of each country to evolve its own types of pottery to suit its own particular environment and customs clearly had play at Mohenjo-daro.[1] Possible exceptions might be vessels in which commodities exchanged in the course of trade were carried ; these would certainly be kept as being foreign, and being prized as unusual they might sometimes be copied.

Arrangement of motifs.

The Designs.—The designs on most of the painted pottery are somewhat conventionalized, and as on the painted pottery of other countries, other than simple cups and beakers, they are mostly placed on the shoulders of the jars, the neck and lower portions of the vessels being left bare. There is a tendency in the Mohenjo-daro ware to arrange the motifs in horizontal registers rather than in the vertical panels so common in Elamitic and Mesopotamian ware. As we shall see later, some of the motifs used in these designs resemble those found in other countries, but the great majority are unfamiliar and difficult of explanation.

In discussing the designs which are made up of a number of motifs, it will be best to deal with the latter separately. But before doing so, it should be stated that designs made up of animal forms cannot well be classified under motifs, unless we are certain of the species of the animals represented, and these in the case of painted pottery are vague and crudely drawn.

Animal Designs (Pl. LXXXIX, 1 and 2 ; Pl. XCII, 20–7)

Few animal designs.

The few animal designs shown on Pl. XCII, 20–7, are all that have as yet been found at Mohenjo-daro in a sufficiently good state of preservation to be either photographed or drawn, although it is possible that many more existed on the countless sherds whose painted surfaces have been almost entirely removed by the action of salt. The comparative infrequency of the animal motif was also noticed in the painted pottery of Jemdet Nasr.

Ibex.

Fig. 20. This design is painted in black on a light red slip on a broken jar found 4 feet below the surface of the ground. The ware is light red in colour, and its clay has a little lime mixed with it. It is very thin for the size of the jar, a very unusual feature in the Mohenjo-daro pottery. The animal represented is obviously an ibex and the two series of marks without doubt represent bushes or trees.[2] A file of similar animals is a very common motif in primitive Mesopotamian art. The ibex[3] must have been well known to the inhabitants of Mohenjo-daro, as it is still found in the Kīrthar Range some fifty miles to the west of that place. See also Pl. LXXXIX, 1, from which the drawing is taken.

[1] The shapes of the modern pottery of Sind do not resemble those of the ancient ware, though they approximate to some of the shapes of the ancient painted ware of Mesopotamia.

[2] This vessel may have been an import. For the ibex and tree motif, see *A Sumerian Palace*, etc., pl. xlv, 10.

[3] Capra ægagrus.

Antelope. Fig. 21. The design shown here was coarsely painted in a purplish-black on a cream slip. Two animals are represented, of which the larger is some kind of antelope with long curved horns. The smaller animal above appears from its plumed tail to be a jackal. There is obviously a bush in front of the antelope, but the other objects surrounding the two animals are difficult to identify. Level, 1 foot below surface.

Bird. Fig. 22. This design is painted on a cream slip, the paint used being a purplish-black. The animal represented is obviously a bird ; its plumed tail suggests a jungle-fowl. The same kind of bird sometimes appears as a character on the seals. The fragment was found 6 ft. 6 in. below the surface.

Snake. Fig. 23. In black on a bright red, and exceptionally well-polished slip. We indubitably have here a representation of a snake, but the position in which it is placed is very unusual in the painted pottery already known to us, on which the snake is customarily represented in a vertical position. That the position I have given the design is correct is shown by the wheel striations on the sherd. This fragment was found 7 feet below the surface.

Lizard. Fig. 24 shows an animal that resembles an ordinary lizard, except that the tail is much too full. It may possibly be intended to represent a monitor,[1] and the fact that no legs are shown implies a very short-legged animal of this kind.

The curvature of this potsherd suggests that it is part of the stem of a brazier. It was found at a depth of 2 ft. 5 in. below the surface of the ground. The design is painted in black on a dark-red slip.

Antelope. Fig. 25. This incomplete design is painted in a purplish colour on a bright-red slip. From the shape of the body, it is probable that an antelope is here represented. The wavy line just below the neck of the animal is possibly intended to be a snake, but of the curious oval objects, which also occur in Fig. 21, no satisfactory explanation suggests itself, unless they are leaves. Level, 6 ft. below surface.

Fig. 26. This fragment, which is of unusual thickness (⅜ in.), was found in a dump-heap and its original level therefore is not known. The design is painted in black on a very thin, cream slip. The animal on the left may be either a goat or an antelope, but the heavy hind-quarters and short legs of the beast on the right suggest a larger animal. The objects between the two animals are evidently bushes.

Fig. 27. The design on this fragment, which came from a level of 2 ft. 6 in. below ground, is painted in a purplish-brown on a pink slip. The two animals represented are again obviously antelopes, but with rugose horns, if I am right in thinking that the short lines are a rough attempt at representing corrugations.[2] There is a tree in front of the animals, whose trunk is missing though the leaves remain. The similarity of these leaves to the unknown objects on their left, which also appear in Figs. 21, 24, and 25, suggest that the latter, too, represent leaves.

Doe. The jar shown in Pl. LXXXIX, 2, which comes from a late burial, is also illustrated in line in Pl. LXXXI, 17. It is coated with a thick, smooth, pink slip, upon which have been painted designs in a purplish black. Owing to the action of salt the slip has scaled badly, but enough of the design is left to show the figure of a doe standing under what may be a bough. Found in the S.E. corner of Courtyard 13, House III, Block 2, HR Area, at a depth of 2 ft. 6 in. below the surface.[3]

Animal types. None of the pottery or fragments of pottery just discussed were found at a lower level than 7 feet below the surface of the ground, and the vase seen in Pl. LXXXIX, 2, appears

[1] Common in Sind. They frequently attain a length of 5 feet.

[2] For an exactly similar way of representing wrinkled horns, see *Mém. Dél. en Perse*, t. xii, p. 175, fig. 302.

[3] See *supra*, pp. 82 and 181.—[Ed.]

to be subsequent to the latest period at Mohenjo-daro.[1] They cannot, therefore, be of earlier date than the Intermediate Period, if they are as early as that. The types of animals portrayed on these fragments closely resemble those represented on the wares from Elam, and suggest a semi-arid country.[2] It is curious that none of the animals represented on the seals appears on the pottery; but we have too few examples of animals on pottery to be dogmatic on this point. The careful filling up of the spaces around the figures is a usual feature of the primitive art of many parts of the East.

Thinner ware. Fragments Nos. 20 and 21 are of much thinner ware than the remainder of the sherds. The paste is more compact and of a brighter colour. They appear to have been made at a different place from the rest of the ware, or possibly they were manufactured separately for some special purpose. As suggested above, they may have been imported.

Hatching. The hatching of the bodies of the animals instead of painting them entirely black—a feature of all the examples from Mohenjo-daro—appears also in the pottery of the Second Period of Susa, at Musyān and Jemdet Nasr. In the pottery of the First Period of Susa, however, the bodies of the animals are usually blocked in entirely.[3] It is possible that the cross-hatching is a rough attempt to represent hair or feathers, as the case may be, though we must not lose sight of the possibility that the painter considered that to fill in all his animals with black would produce too heavy an effect.

Serpent. The serpent (Figs. 23 and 25) is a very common motif in all painted pottery of ancient date. The ease with which it could be drawn and its adaptability by shape to fill in small spaces was doubtless the cause of its popularity. At the present day, the serpent is one of the few motifs used in the painted pottery of Sind, though its original significance is now lost, and, as in some ancient pottery, it has degenerated into an undulating vertical line.

Humped bull. Up to the present we have not found any representation of the humped bull on the Mohenjo-daro pottery, though it occurs frequently on the seals.[4] That this animal was also known in Balūchistān in early days is definitely proved from the fragment of painted pottery from Nāl illustrated in Pl. XCIII, 30.[5] This animal is also portrayed on some carved asphalt vases of early Susa.[6]

Plant Designs (Pl. LXXXIX, 4, 7, 13; Pl. XCII, 1–13)

Plant common motif. The plant or tree is perhaps the most favoured of all. It occurs in one form or another on most of the painted pottery. It is exceedingly easy to draw and, moreover, is useful to fill up indefinite spaces. Most of the plant-forms are unrecognizable, but it is certainly the palm that is represented in Fig. 9 in Pl. XCII, and what may be some kind of millet in Fig. 5 on the same plate.[7] It will be noticed that most of the plant forms on the Mohenjo-daro ware are naturalistic—they have not that angularity that is characteristic of the few representations of trees on the Susian pottery. In this respect they resemble the one or two representations of trees that were found on the pottery of Jemdet Nasr. Fig. 6 in Pl. XCII

[1] Not necessarily so. The ruined building which contained this fractional burial is of Intermediate date. See p. 82 *supra*.—[Ed.]

[2] On the other hand, the animals represented on the seals from Mohenjo-daro belong to a forest country.

[3] The reverse occurs in Egypt. Hatched bodies came first and then a period when they were filled in entirely. In modern Kabyle pottery the body of an animal is always hatched.

[4] See seals Nos. 327–40.

[5] It is one of the most characteristic motifs on the Mehī pottery of Balūchistān.—[Ed.]

[6] *Mém. Dél. en Perse*, t. xiii, pl xxxiv, figs. 5 and 6.

[7] Millet has been cultivated in India from very early times. Most of the varieties have Sanskrit names.

is an excellent example of the naturalistic style; there is not the slightest trace of stiffness anywhere. The same is true of Fig. 9 in Pl. XCII, where the palm swathes are drawn in a most natural manner, and of the tree or shrub in Fig. 3.

Conventionalized plant designs.

In another type of decoration the use of plant-forms is more conventional, as will be seen in Pl. LXXXVIII, 6 and 12. Designs of this type are always carried out in black on a red slip, and very rarely occur in combination with any other form of decoration. They can hardly be described as beautiful; in fact, they are almost bewildering, the greater part of the jar being covered with irregular partitions with a leaf in the centre of each. In some cases, however, these partitions become highly regularized and geometrical in form (Pl. LXXXIX, 3 and 13; Pl. XCI, 8, 27, 31, and 33), the central leaf motif losing all semblance to a leaf and becoming a mere line. This form of decoration seems to have been yet further modified into a very common design (Pl. XCI, 30 and 32), a scale-like pattern.[1, 2] That no long period of time was needed to produce these modifications is proved by their being frequently found almost at the same level.

Balūchistān pottery.

In the northern part of Balūchistān as well as in the south, Sir Aurel Stein has found pottery[3] with designs exactly similar to Pl. XCI, 8 and 27; designs which were at first thought to be peculiar to Mohenjo-daro and Harappā, but which we now know to extend over a much larger region.

Leaf motif.

There is a fairly common plant motif at Mohenjo-daro, two examples of which are illustrated on Pl. XC, 18 and 19. This apparently represents a lanceolate leaf, which may be conventionalized from a water plant or an arum. It is found neither on Elamitic nor on Mesopotamian pottery, but occurs on some of that from Nāl.[4] The same plant-form on painted pottery has also been found by Stein in Balūchistān.

Pipal tree.

Though the Pipal tree is illustrated on one of the seals (Pl. CXII, 387), it does not appear on the pottery of Mohenjo-daro. A leaf motif, which is perhaps derived from the pipal,[5] appears on a fragment of pottery from Nāl in central Balūchistān, the pottery of which place can be compared, as far as some of the designs upon it are concerned, with the Mohenjo-daro ware.[6]

Triangles (Pl. LXXXVII, 1; Pl. XCII, 6 and 18)

Triangle designs rare.

Triangles, whether arranged in single, double, or triple rows, cannot be said to have been a common form of decoration, as was the case at Jemdet Nasr, Musyān, and in most parts of the ancient world, where, indeed, it can safely be said that it was the most common of all motifs in the decoration of painted and incised pottery. And why it should be so rare at Mohenjo-daro it is difficult to explain, especially as it is very popular with the modern potter

[1] The scale ornament in Pl. XCIII, 21 and 22—both from Nāl—is also a common one at Mohenjo-daro, both on the modern painted pottery that is manufactured in a village close to the site and on the ancient pottery (Pl. XCI, 30 and 32). It is also frequently carved on the yokes of the primitive carts of Sind. Exactly the same motif has been found in Balūchistān by Stein, with the difference that the interiors of the scales are hatched. See also *Zeit. fur Ethn.*, 1898, p. 468, fig. 36.

[2] This may be a conventionalized feather pattern. In Egypt the motif was undoubtedly derived from this source. *Ancient Egypt*, 1923, pl. i. With markings inside the loops the motif is also known in Mycenaean art.

[3] *Mem. Arch. Surv. Ind.*, No 37, pls. xiv ff.

[4] *Annual Report of the Archæol. Surv. of India* 1904–5, pl. xxxiii, figs. 1 and 2. See also Pl. XCIII, 1.

[5] See Pl. CLIV, 9 of this work.

[6] Very much the same kind of leaf is to be found on some early seals from Susa. *Mém. Dél. en Perse*, t. xvi, pls. xxi, xxii, etc.

of Sind and, moreover, is one of the simplest and most effective motifs for the decoration of pottery. The triangle motif must not be confused with the so-called double-axe motif, in which two triangles are placed with their apexes together (Pl. XCII, 15 and 19). This latter motif is described below.

Hatching.

Hatching was the almost universal method of filling in the interiors of triangles all over the ancient world, whether they were painted or incised, and we find, as one would expect, that the same method was adopted at Mohenjo-daro. What these triangles, which are nearly always shown with their apexes upwards, were intended to represent, it is difficult to say, but the general opinion is that they are an attempt at portraying mountains. Such a simple motif as a triangle need, however, have had no significance at all ; in all probability it was derived from simple weaving.

Double-triangle Ornament (Pl. LXXXVIII, 5 and 7 ; Pl. XCII, 10, 14–17 and 19)

This ornament must not be confused with the well-known Aegean symbol, the double-axe, with which, of course, it is hardly likely to have a connection. The double triangle is a very common motif indeed in both Susian periods,[1] at Musyān, and at Jemdet Nasr in Mesopotamia. It also appears on a vase found in the neighbourhood of Erivan,[2] and on pottery from Anau.[3]

Methods of arrangement.

The double-triangle motif generally appears placed alternately upright and horizontally, an arrangement which forms a very attractive border. In all the examples found at Mohenjo-daro the interiors of the triangles are hatched, but at Jemdet Nasr and also on the pottery from Elam and Turkestan, they are blocked in with either black or red paint, the colours being used alternately.[4]

Balūchistān pottery.

Exactly the same motif is seen on some of the Nāl pottery (Pl. XCIII, 8), and it occurs at Dāmba Koh in southern Balūchistān (Pl. XCIII, 9 and 10). At the latter site, the motif has the addition of a pair of spirals at each end, a feature which I have not observed on pottery elsewhere.

Especially in borders, this double-triangle ornament is frequently placed at regular intervals around a jar separated by groups of three or more vertical lines, as is seen in Pl. XCIII, 8. The same arrangement occurs on early painted pottery from northern Balūchistān, Susa,[5] Mesopotamia,[6] and the province of Honan in China,[7] where, however, the main ornament tends to become attenuated.

Possibly elaboration of triangle motif.

This motif is an elaboration of the triangle motif, but a fine vase from Greece shows a warrior either carrying a shield or wearing a garb that suggests this device.[8] Again, there have been found at Harappā in the Panjāb double-axes of bronze or copper that in shape closely resemble the ornament found on the pottery. Such axes have not yet appeared at Mohenjo-daro, but they will doubtless be found later on in the lower levels.

[1] *Mém. Dél. en Perse*, t. xiii, pl. vi, figs. 1, 2, and 5.
[2] Frankfort, *Studies in Early Pottery of the Near East*, pt. i, pl. v, No. 1.
[3] Pumpelly, *Explorations in Turkestan*, vol. i, pl. xxviii, No. 1 ; p. 130, fig. 82.
[4] Also in China. *Palæontologia Sinica*, Geological Survey of China, Series D, vol. i, fasc. 2, pl. iv.
[5] *Mém. Dél. en Perse*, t. xiii, pl. vi ; pl. xxxi ; t. viii, pl. vii.
[6] *Archæologia*, vol. lxx, pl. x.
[7] *Palæontologia Sinica*, Geological Survey of China, Series D, vol. i, fasc. 2, pl. xii.
[8] *Mém. Dél. en Perse*, t. xiii, p. 95, fig. 212.

The curious ball-like object affixed to a vertical line, which in Pl. XCII, 19, partly fills the space between the triangles, is unusual. One example only of this particular motif has been found at Mohenjo-daro, but it is more common on the painted pottery of Balūchistān and has also been found once at Anau.[1] **Unusual motif.**

Chequers (Pl. XCII, 3, 9–13)

This striking decoration was fairly often used at Mohenjo-daro. It was also popular at Jemdet Nasr and examples have been found on the painted pottery from Musyān. But it seems to have been used on the pottery of the first period only at Susa, and then but rarely. It is fairly common in Balūchistān.[2] This form of ornament is most probably derived from basket work.

Methods of ornamentation. In the examples from Mohenjo-daro the chequers are always hatched in the same colour as their outlines, namely, black. The ground is generally a red slip, but the design in Fig. 11 is painted on the natural surface of the pottery. An unusual feature is the filling in of the unhatched squares with small circles, dots, double lines, etc., a refinement that I have not seen before on ancient painted pottery. The lozenge pattern, a companion ornamentation to the chequer ornament, and formed by the use of oblique instead of vertical and horizontal lines, has not yet been found at Mohenjo-daro, though there is no reason to think that it may not come to light.

Hide Motif (Pl. LXXXIX, 5; Pl. XCI, 1–11)

Popular design. This motif, which resembles the hide of an animal stretched out for drying, is very common at Mohenjo-daro. It has, however, not yet been found in Sīstān and appears to be unknown on the pottery from Elam. The portion of the jar to be so decorated was first of all divided by thin lines into squares, in each of which the motif was drawn. There is no doubt that the the effectiveness of this design contributed to its popularity. It may have been derived from interlocking circles, as in Pl. XC, 22. Five of the examples illustrated were painted in black on either a light or a dark-red slip. Fig. 6, however, was painted on a cream slip.

Cross-like Designs (Pl. XCI, 7, 9–11)

The cross-like designs illustrated in Pl. XCI, 7, 9, 10, and 11, really belong to the same group, though they have come to represent a four-petalled flower, which was a very popular design at Mohenjo-daro. The motif does not appear on the ancient pottery of Mesopotamia or of Elam, nor on that of Sīstān. It is repeated with monotonous regularity in one of the registers on the very fine painted jar pictured in Pl. LXXXVII, 4. And here, in addition, the curvature of the arms of the crosses is such as to produce an effect of overlapping circles, whose centres are occupied by the diamonds between successive crosses.

Nāl pottery. This modified design is shown more clearly in Pl. XC, 22. The design here illustrated was painted in black on red. Exactly the same pattern, but painted in a variety of colours is a feature of some of the Nāl pottery (Pl. XCIII, 27). The resemblance is so close that the two designs might almost have been the work of the same potter, except that the wares on which they are painted are radically different. The motif does not appear on any of the Elamitic wares or elsewhere to my knowledge, but it occurs in Northern Balūchistān.[3]

[1] Pumpelly, *Explorations in Turkestan*, vol. i, pl. xxx.

[2] *Zeit. für Ethn.*, 1898, p. 467, fig. 26; p. 469, fig. 39; *Mem. Arch. Surv. Ind.*, No. 37, pl. xxi.

[3] *Ibid.*, pl. xv.

Comb Motif (Pl. LXXXVII, 6 ; Pl. LXXXIX, 9 ; Pl. XCI, 13, 14, and 16 ; Pl. XCIII, 7)

This motif is often found on the pottery of Mohenjo-daro, and has been so named because of its resemblance to a comb. In Pl. XCI, 13, the ends of the object are involved with the round objects on either side, but that it is in reality quite distinct from them is shown in Fig. 16 of that plate.

Found on Susian ware.

No motif of this nature is found on the wares of Jamdet Nasr or Sīstān, but it is a very common feature on the Susian ware, though only on the pottery of the First Period.[1] Nothing at all like it is to be found on the pottery from Musyān. It is sometimes found on Hittite pottery.[2] There is no doubt that the objects represented on the Susa pottery are combs ; and they very closely resemble the Mohenjo-daro representations. The chief difference is the roughness of execution of the latter examples, which, however, can be accounted for by degradation ; nor is it impossible that the original meaning of the motif had been completely forgotten.[3]

The V Motif (Pl. XCII, 8, 17)

Possibly bird motif.

This motif that occurs so frequently at Mohenjo-daro, as also on the painted pottery from other places, appears to me to be a degraded form of the bird motif ; it was used indiscriminately when all sense of its origin had been lost. The process of degradation of this motif is clearly seen on pottery even of the First Period of Susa, and especially in one case from Musyān, where it is very marked.[4]

Unusual Motifs

Pl. XC, 24, shows a design on the jar portrayed in Pl. LXXXVII, 4. The chief motif of this pattern recalls two paste objects found by Rai Bahadur Daya Ram Sahni at Harappā.[5] The objects are said to be bangles, but a series of flanges around the outside seem to me too thin and fragile for the objects to have been worn on the arms. Whatever they may be, there is no doubt, I think, that the Harappā objects are the same as the objects represented on this sherd. I cannot find the motif on the pottery of any other country.

Vessel Motifs (Pl. XC, 23 ; Pl. XCI, 7 ; Pl. XCII, 3)

Imitations of ceramic shapes.

The confusing pattern illustrated in Pl. XC, 23, comes from the self-same jar (Pl. LXXXVII, 4), and that it is not a freak design is proved by its being also found on the fragments of another jar (Pl. XCI, 7). Whether by chance or not, some of the intervals between the wavy lines take the form of jars. That this was not accidental is suggested by the fact that jars of another shape appear in the design in Pl. XCII, 3. Pottery shapes seem to be a curious decoration for painted pottery, but at Jemdet Nasr a small representation of a spouted vessel was also found painted on a jar. Nothing of the same nature has been found as yet on the early pottery of Elam or other places, with the exception of a doubtful example on a sherd from China.[6]

[1] *Mém. Dél. en Perse*, t. xiii, pls. xv, xvi, xvii.
[2] Frankfort, *Studies in Early Pottery of the Near East*, ii, pl ix, fig 2.
[3] The same object may perhaps be represented on one of the seals. See Nos. 161, 329.
[4] *Mém. Dél. en Perse*, t. xiii, pl. xxvii, fig. 4. It occurs, also, on the predynastic pottery of Egypt.
[5] *Ann. Report, Northern Circle, Arch. Surv. Ind*, 1920, pl. ix.
[6] *Archæological Research in Kansu*, Geological Survey of China, Series A, No. 5, pl. viii, Nos. 1 and 2. The vase motif is of course common in Kashi enamel ware, and in Islamic decoration generally.

Sun Motif (Pl. XCI, 13, 14, and 15)

The sun-like motifs shown in Pl. XCI, 13, 14, and 15, are difficult of interpretation. The radial lines which occur on the outer edge suggest an attempt at representing beams of light. At the same time, they recall the flanges on the outside of the so-called bangles from Harappā mentioned above, though this resemblance ceases when we look at the interiors of the figures. It must be left to the reader to decide what these motifs most closely resemble. A very similar motif has been found on a sherd from Susa dated to the Second Period,[1] and also on a sherd from Musyān.[2] The motif does not appear at all on the pottery from Jemdet Nasr, but it is not uncommon on Aegean wares, and is found painted on some of the pottery of the Chalcolithic period of China.[3]

Scrabble Marks (Pl. LXXXVIII, 1 ; Pl. XC, 13, 14, and 18)

The surfaces of some of the jars, especially those of larger size, are scored all over with scrabbling placed in bands. These markings are quite irregular and arranged both vertically and horizontally. In some cases they are so roughly done that they may have been painted by child labour. Occasionally, but very rarely, a plant motif is mixed up with this scrabbling, as in Pl. XC, 18. This scrabble work is generally in the form of bands, ranging on the large storage jars from 6 to 9 inches wide, which are sometimes decorated along the bases by means of simple loops with trefoils hanging from them at intervals.[4]

Another favourite form of decoration, again usually employed on the larger jars, is the pattern shown in Pl. LXXXVIII, 13, in which partitions formed by roughly drawn vertical lines are filled in with horizontal marks, somewhat suggesting a spider's web. Another variation of this is to be seen in Fig. 11 on the same plate. It might be thought that this decoration, which is always in black on a red or a light-coloured slip, is characteristic of a late type of pottery and due to extreme degradation. This, however, is not the case, for pottery so decorated is found at the same levels as the other types illustrated on the plates. It was, doubtless, found profitless to spend much time over the decoration of storage jars, especially as these would be kept in secluded positions. **Ladder patterns.**

Fluting (Pl. LXXXVII, 3 ; Pl. XC, 25)

The design illustrated in Pl. XC, 25, is quite unusual; originally it may have been derived from a flower or imitated from fluted metal-work. Two examples are at present known from Mohenjo-daro. The first (Pl. XC, 25) is painted on the outside of what seems to have been the pan of a brazier in a purplish-brown paint on a cream slip. The second example, painted in black and red on a cream slip, occurs on a fragment of the pan of a brazier, which is illustrated on Pl. LXXXVII, 3. No examples of fluted metal-work have as yet been found at Mohenjo-daro, but specimens from Kish in Mesopotamia show that this particular form of technique was practised in very early times,[5] and, though this design is radically different from any others on the painted pottery of Mohenjo-daro, there is no reason to suppose that it is of later date.

[1] *Mém. Dél. en Perse*, t. xiii, pl. xxviii, fig. 8. [2] *Mém. Dél. en Perse*, t. viii, p. 112, fig. 185.

[3] *Palæontologia Sinica*, Series D, vol. i, fasc. 2, pl. xii, fig. 62.

[4] For an example from N. Balūchistān, cf. Stein, *Mem. Arch. Surv. Ind.*, no. 37, pl. xiv.

[5] Mackay, *Report on the Excavation of the "A" Cemetery at Kish*, pt. i.

Borders

(a) *Zig-zag Borders* (Pl. XCI, 6 and 17 ; Pl. XCII, 10)

The zig-zag pattern is always very roughly done. On the pottery of Mohenjo-daro it is used between straight, horizontal lines to form a border to separate various designs. In its simpler form this border does not occur on the pottery of Jemdet Nasr, but it is known on vessels from Susa [1] and Musyān,[2] and it is a very common feature on the pottery from Nāl [3] as well as on the early wares from other parts of southern Balūchistān. It is largely used at the present day on the painted pottery from Sind, and there it is always painted in an irregular manner. Possibly the origin of this form of border was water. The best example of a zig-zag border of this kind is seen in Pl. XCI, 17, where the zig-zags are composed of groups of parallel lines.[4]

The zig-zag design was, however, used in a much bolder manner at Nāl, Susa, and Anau than on the pottery of Mohenjo-daro. On pottery from the first two sites the design covers a considerable space, as is seen in Pl. XCIII, 4, 18, 19, and 20, and for this reason, in conjunction with certain similarities between the wares themselves, it appears probable that they were related.

(b) *Loop Lines* (Pl. LXXXVII, 5 ; Pl. LXXXIX, 15 ; Pl. XC, 18 ; Pl. XCI, 19)

This form of border is allied to the border just described, and, like it, is always arranged horizontally. When attached to an upper line, as frequently happens, the pattern forms a series of loops like festoons. These borders are common at Mohenjo-daro, but not at Jemdet Nasr, where the more angular or zig-zag form was favoured. At Musyān and Susa the looped lines are generally double.[5] A form of wavy line from Mohenjo-daro may be seen in Pl. XC, 20, where the loops are double, with a series of strings hanging from the lower loops.

Origin. It is possible that the origin of this very simple border is a garland of flowers or leaves, a spot, which originally may have represented a flower, being sometimes placed in each loop, as in Pl. LXXXVII, 5. In Pl. XCI, 22, a double, wavy line is hatched in the middle. This variety of border is well represented on the Musyān pottery and is rarer on the Susa ware.[6]

(c) *Hemispherical Borders* (Pl. LXXXIX, 11 ; Pl. XCII, 2)

Another elaboration of the loop-line border is that shown in Pl. XCII, 2, where the loops are filled in with hatching. This border is quite common at Mohenjo-daro, and variations of it are found in the Sīstān pottery, and also in the prehistoric pottery from

[1] *Mém. Dél. en Perse*, t. xiii, pls. iv and v.

[2] *Mém. Dél. en Perse*, t. viii, p. 125.

[3] Pl. XCIII, Figs. 19 and 20, of this work.

[4] For the same arrangement, see the border in pl. xxxi of *Mém. Dél. en Perse*, t. xiii. It also occurs on the Sīstān pottery. Andrews, *Burlington Magazine*, Dec., 1925, pl. ii, Nos. 40 and 84.

[5] *Mém. Dél. en Perse*, t. viii, pls. xxviii, xxxi, etc. T. xii, p. 215.

[6] *Mém. Dél. en Perse*, t. iii, p. 120, 121, etc.

Balūchistān. The hemispherical loops sometimes occur separately, as beneath the animal in Pl. XCII, 26, but a continuous series generally serves as a border right round the jar. In all the examples from Mohenjo-daro that I have seen, these hatched hemispheres are placed with their curved surfaces uppermost, but in the pre-historic pottery of north and south Balūchistān they are set either way.

Original meaning. The origin of this very simple decoration may be connected with the well-known Susian motif of a file of birds (ostriches or swans) lying on the ground or in water.[1] If from this the heads were at any time omitted, the original significance of the design would soon have been lost.

(*d*) *Bead Borders* (Pl. LXXXVII, 6; Pl. LXXXIX, 11; Pl. XCI, 13 and 16; Pl. XCII, 3 and 24)

This variety of border, a very common one at Mohenjo-daro, has been so named because it resembles a row of long beads linked together. The interiors of the b-ads are always hatched. This type of border occurs on one small jar from Musyān,[2] and a slight modification of it has been found in Sīstān.[3] It does not occur at Jemdet Nasr, but a form in which the beads are definitely lozenge-shaped, as in Pl. XCI, 21, is common in the First and Second Periods of Susa. This variety of border is very common on the Nāl pottery. It is known also on the painted pottery from Anau.[4]

(*e*) *Hemisphere and Triangle Borders* (Pl. XCI, 18 and 25)

This also is a common border at Mohenjo-daro. It occurs with a slight modification in Sīstān,[5] but has not been found, as far as I am aware, at either Susa or Musyān. There is no doubt as to its effectiveness as an ornament, and it was a simple border to paint.

(*f*) *Borders of Triangles with Incurved Sides* (Pl. XCI, 12)

This is rarely found at Mohenjo-daro and in the examples illustrated the spaces between the triangles are filled in with leaves. The same design, but without the leaf, is found in Sīstān[6] and something similar at Musyān,[7] where, however, the triangles are straight-sided and have their free edges serrated or notched. This border is not found at all on the Susian pottery. The triangle with incurved sides, either as a separate motif or in combination with other motifs, is also known in the prehistoric sites of N.E. China.[8]

(*g*) *Roundel Borders* (Pl. XCI, 26, 27, and 31)

Borders of this pattern are of common occurrence at Mohenjo-daro. I can find no trace of the roundel motif in a border on the wares of Sīstān, Musyān, Susa, and Jemdet Nasr, though it is used otherwise.[9] In these borders there is always a spot in the middle of each roundel.

[1] *Mém. Dél. en Perse*, t. xiii, pl. xxxi.

[2] *Mém. Dél. en Perse*, t. viii, p. 107.

[3] Andrews, *Burlington Magazine*, Dec., 1925, pl. i, Nos. 23 and 26.

[4] Pumpelly, *Explorations in Turkestan*, vol. i, pl. xxv, p. 130, fig. 83.

[5] *Burlington Magazine*, Dec., 1925, pl. ii, No. 52.

[6] *Burlington Magazine*, Dec., 1925, pl. i, fig. 44.

[7] *Mém. Dél. en Perse*, t. viii, p. 102.

[8] *Palaeontologia Sinica*, Geological Survey of China, Series D, vol. i, fasc. 1, pl. xii; fasc. 2, pl. xii, etc.

[9] As would be expected, it is known on the prehistoric painted pottery of north Balūchistān found by Sir Aurel Stein. *Mem. Arch. Surv. Ind.*, No. 37.

(h) *Chequer Borders* (Pl. LXXXIX, 13 ; Pl. XCI, 1 and 33)

As a form of border, chequers were always used in a single line, and no attempt was made to paint the squares in alternate colours nor to differentiate them in any way. Like the roundels, each square has a spot in the centre. This form of border does not seem to have been used on the pottery of either Elam or Sīstān, despite its extreme simplicity.

(i) *Miscellaneous Borders*

Plain lines used as borders are common to all the painted pottery of the ancient world. The spaces between were frequently filled in with other lines set at right angles, to relieve the monotony. A curious border of this type is seen in Pl. XCI, 23, where a group of thin lines is followed by a group of thicker, notched ones. This is the only example found as yet at Mohenjo-daro. Somewhat the same idea occurs on one of the sherds from Sīstān,[1] but here the group of thicker, wavy lines is arranged parallel with the long lines of the border. This modification also appears on a piece of Musyān pottery.[2]

Comparisons with Elamitic designs.

Allied to this type of border is the one illustrated in Pl. XCI, 24, in which there are similar groups of thin, vertical lines. The spaces between them are, however, filled in with small, curved markings, similar to those in the designs shown in Pl. XC, 19, and Pl. XCII, 8 and 17.[3] The same idea, but with straight markings, will be seen in Pl. LXXXIX, 10 and 14. Exactly similar markings are found on the Susa and Musyān pottery ; they are details of quite frequent occurrence on most ancient painted ware.

Centipede.

A very curious border indeed is illustrated in Pl. XC, 21. It is the only example of its kind found at Mohenjo-daro, and I have not been able to find its exact counterpart on any other painted ware. The figure looks like some form of centipede.[4] This very interesting motif differs only very slightly from one that is common on some of the Nāl pottery (Pl. XCIII, 5). It is possible that the painter of the Mohenjo-daro fragment, not knowing what the motif was supposed to be, changed it slightly to make it resemble an insect. The motif as it appears on the Nāl pottery is extraordinarily like some on the painted pottery from Susa and Musyān ; a comparison with Nos. 4 and 6 in Pl. XCIII will show the great resemblance. And perhaps it is not stretching the imagination to compare the Nāl and Elamitic examples of this motif with one found on a sherd from Abu Shahrein.[5] There can be no doubt that this motif is a degraded form of the antelope figure.

Later period than pottery of Elam.

From the general style of its decoration the painted pottery of Mohenjo-daro appears to belong to a later period than the painted pottery of Susa I, and perhaps even than that of Susa II. The Mohenjo-daro ware is, however, very closely connected with the painted pottery found by Sir Aurel Stein in Sīstān and in north and south Balūchistān.[6] There are many motifs which, common to these countries, do not appear on any of the Mesopotamian and Elamitic wares. The flowing designs derived from plant-forms are quite foreign to the latter wares, but distinctive of the wares of Sind, Balūchistān, and Sīstān.

[1] Andrews, *Burlington Magazine*, Dec., 1925, pl. 1, No. 1.

[2] *Mém. Dél. en Perse*, t. viii, p. 97, fig. 143.

[3] Also to be found in Balūchistān pottery. *Zeit. fur Ethn.*, 1898, p. 467, fig. 24 ; p. 468, fig. 33.

[4] Pl. XC, 21, which is upside down, is very like some of the Mehi ware described on pp. 98-9, though the antelope motif is more degraded here than it usually is on the Mehi ware.—[Ed.]

[5] Campbell-Thompson, *Archaeologia*, vol. lxx, pl. x.

[6] As regards the painted pottery from north and south Balūchistān, see *supra*, pp. 97 ff. Although the Sīstān wares exhibit certain motifs in common with those of Mohenjo-daro, their fabrics seem to me radically dissimilar.—[Ed.]

Connection with Elam. That there was, however, some ancient connection with Elam seems to be proved by certain motifs common to the wares of both Mohenjo-daro and Elam, though in slightly different forms. For instance, the double-triangle motif is common to both, as well as being found on the pottery of Mesopotamia and Turkestan. This design, though simple in conception, has certain characteristics, such as its vertical and horizontal arrangement, which would hardly have been evolved independently. Another motif, common to Elam and western India, is the comb which, curiously enough, is only found on the pottery of the First Period of Susa, and yet appears on the later pottery of Mohenjo-daro and Harappā, but in a degraded form. This motif, as far as I have been able to trace, does not occur on any other painted pottery.

Stepped triangles. The curious triangular motif with a stepped or notched edge that is so common a feature of the Nāl pottery (Pl. XCIII, 13, 14, 16, and 23), though, strangely enough, unknown at present on the painted ware of Mohenjo-daro, is represented in many of the pieces of shell-inlay found on the latter site (Pl. CLV, 31–3). There is little doubt that this motif will be found on the pottery that has yet to be unearthed. It occurs also, in a modified degree, in the painted pottery of Sīstān,[1] and is quite distinct in the Anau ware.[2]

Basket-work patterns. It is a well-known fact that many of the designs on painted pottery are derived from either basket or leather work, or possibly sometimes a combination of the two. It is probable that basket-work was practised before the potter's art came into being. Indeed, the latter was eventually derived from the former, more or less by accident ; a basket coated with clay to preserve its contents—more probably from the attacks of insects than from danger by water—was accidentally burnt. The result was that a pottery vessel came into being, all traces of the basket being lost, except its impression in the clay. If the clay had been applied to the inside of the basket, the impression of the latter would naturally be on the outside of the vessel so formed.

Impressions of basket-work on the outside of a vessel probably led to the use for decoration of the triangle, chequer and lozenge motifs, all of which seem derived from plaited work.

Other patterns. It could not have been long before other designs than those derived from basket-work were used for the decoration of pottery. The owner, who was probably at first the actual maker, may well have placed his sign on his jars as a means of identification ; and later on he would have adapted his device to make a running decoration. The forms of domesticated animals would then have been used for ornament, and eventually plant designs. In this connection, it is a curious fact that the ox or cow very seldom appear on painted pottery of the Near and Middle East. It is nearly always animals such as various kinds of antelopes, ibex, etc., that are depicted, a fact that suggests that these animals were domesticated in very early times.[3] That this was actually so in Mesopotamia is proved by archaic seals frequently showing one or more lions attacking antelope which are in charge of a herdsman.

Dating. We are not yet able to date the painted pottery of Mohenjo-daro with any degree of certainty. It is as plentiful in the upper levels as in the less explored, lower levels ; and as far as we can see at present, there is but little difference in style and technique at the various levels. Provisionally, therefore, we must regard all the painted pottery found at Mohenjo-daro as ranging from some time in the fourth millennium down to the end of the first quarter of the third millennium.

[1] Andrews, *Burlington Magazine*, Dec., 1925, pl. i.

[2] Pumpelly, *Explorations in Turkestan*, vol. i, pl. 35.

[3] The eland, for instance, has been successfully tamed and even milked. In South Africa it has been used as a draught animal.

Comparisons with other countries.

In the approximate dating of painted pottery we have some help from Mesopotamia. At Jemdet Nasr, a few miles N.E. of Kish, a considerable range of painted pottery was found,[1] which by comparison of form and other indications has been dated as considerably earlier than a range of incised but unpainted pottery found at Kish itself. And this latter pottery is known from other evidence to be pre-Sargonic in date, i.e. before 2,700 B.C. The Jemdet Nasr ware is of the same period as, or a little later than, the pottery of the Second Period of Susa, and some of it, moreover, closely resembles the painted pottery from Musyān both in form and style of decoration. The order, therefore, of painted pottery from the countries with which we are concerned I would place as follows :—

Susa (First Period)	c. 4250 B.C.[2]
„ (Second Period), Musyān, Jemdet Nasr	c. 4000 B.C.
Mohenjo-daro (Early Period)	c. 3250 B.C.
„ (Intermediate Period)	c. 3000 B.C.
Nāl (Balūchistān)	c. 3000 B.C.[3]
Mohenjo-daro (Late Period)	c. 2750 B.C.

In Sind at the present day, as no doubt anciently, the painting of pottery is the task of women.[4] The jar to be ornamented is revolved on a wooden pivot placed on a stone or brick, and a jar cover with an interior projection is placed in the mouth of the jar to help the slow revolution necessary for the painting.[5]

Stands of censers.

There is yet another connection between the painted wares of Mohenjo-daro and those of adjacent countries ; but one that concerns shape rather than decoration. The stands or censers found at Mohenjo-daro as well as at Harappā must be included as painted pottery, though in the majority of cases they are merely covered with a red slip and decorated with plain lines of black. In rare cases, however, the stem and other parts of these stands are decorated with designs, and, more rarely still, painted in polychrome (Pl. LXXXVII, 3). That these stands were sometimes used as censers seems proved by one of these articles, identical in shape with some found at Mohenjo-daro, appearing in a bas-relief found at Susa, where it is carried by a man.[6]

Chinese stand.

What may be a stand of very similar type is pictured on a sherd from the province of Honan in China.[7] It is not, however, recorded whether actual offering-stands have come to light in the ancient sites that are just beginning to be searched in that now-troubled land.

History of painted ware in India.

The history of painted ware in western India is interesting ; the connection, as far as we can see, is unbroken down to modern times. A provisional examination of the site called Jhukar, about 18 miles N.W. of Mohenjo-daro, affords us proof of the continuity of painted ware in this part of India. In the lowest level of this new site badly damaged brickwork was found belonging to the Late Period of the Indus Valley civilization. Here we unearthed painted pottery of identical type with that of Mohenjo-daro.

A few feet above this stratum were found buildings belonging to a second occupation. Painted pottery occurred here also, but of inferior workmanship. The forms of this pottery, though related to those in the level below, were slightly different from the earlier ware.

[1] To be published shortly.
[2] Cf *Cambridge Ancient History*, vol. i, p. 362.
[3] According to Sir Aurel Stein this should be placed later than that of Mohenjo-daro.
[4] Before the wheel came in pottery-making was women's work.
[5] *J.R.A.I.* vol. lx, p. 132.
[6] Babelon, *Manual of Oriental Antiquities*, p. 323, fig 247. See also Pl. CLIX, 5 of this work.
[7] *Palæontologia Sinica*, Geological Survey of China, vol. i, fasc. 2, pl. vi, fig. 16.

The finish is also crude and the designs show a marked degradation. Taking into consideration the level at which this pottery was found, we may date it provisionally to a period 250–500 years later than the pottery found in the stratum below.

Kushān period. The summit of the mound at Jhukar was found to be occupied by buildings of the Kushān period (third century A.D.). Much of the painted pottery found in these buildings was of excellent workmanship. Even at this late period, the pottery was beautifully made and finished. The motifs, however, are entirely different from those on the prehistoric pottery found in the lowest level and the level immediately above it. Running plant forms and designs consisting of isolated groups of flowering plants point to Greek influence. The forms of the vessels vary very considerably from those of the earlier wares ; they are more complex and their surfaces are sometimes purposely roughened in a curious way.

Continuity. From our investigations in the mound at Jhukar, therefore, we are able to show that in Sind (it may also be the case in other parts of India) painted pottery had a continuous existence and survived down to a very late period. The old motifs, it is true, have disappeared but the art itself has survived.

Painted pottery in Mesopotamia. In Mesopotamia painted pottery entirely disappeared about the beginning of the Sargonic period. The same is true of Elam, where also its disappearance was probably due to Sumerian influence, for, as far as we can see, painted wares were not a feature of Sumerian culture. The painted pottery found at Al 'Ubaid belongs to the dawn of Sumerian culture in Mesopotamia ; if it be Sumerian, in all probability it was inherited from the pre-Sumerians. Further investigation, however, is necessary before we can dogmatize on this subject. The present evidence appears to indicate that the Sumerians as a race did not manufacture or use painted ware, except in the earliest stages of their Mesopotamian history. If this be so, it may assist us in eventually localizing the original home of the Sumerians. That it was on the northern or eastern shores of the Persian Gulf appears unlikely.

A tabulation of the painted pottery described in this chapter, giving the colours of the various slips and other details, follows.

	Slip.					Paint.				Paste.				Decoration.		Ware.			
Plate.	Light Red.	Dark Red.	Pink.	Cream.	Buff.	Black.	Purple-Black.	Brown-Black.	Red.	Mica.	Sand.	Lime.	Dirt.	Monochrome.	Polychrome.	Thick.	Thin.	Area.	No.
LXXXVII, 1	—	—	X	—	—	X	—	—	—	X	X	—	—	X	—	X	—	DK	2782
" 2	—	—	—	X	—	X	—	—	X	—	X	—	—	—	X	—	X	VS	3092
" 3	—	—	—	X	—	X	—	—	X	—	—	X	X	—	X	—	X	HR	980
" 4	X	X	—	—	—	—	X	—	—	X	X	—	—	X	—	X	X	D	287
" 5	X	—	—	—	—	—	X	—	—	—	—	X	—	X	—	X	—	HR	775
" 6	—	—	—	—	X	—	X	—	—	—	—	X	—	X	—	—	X	DK	714
LXXXVIII, 1	—	X	—	—	—	X	—	—	—	—	—	X	—	X	—	X	—	SD	1759
" 2	X	—	—	—	—	X	—	—	—	—	—	—	X	X	—	X	X	SD	2297
" 3	—	—	X	—	—	X	—	—	—	—	—	—	—	X	—	X	—	DK	2782
" 4	—	—	X	—	—	X	—	—	—	—	X	—	—	X	—	X	—	DK	—
" 5	—	X	—	—	—	X	—	—	—	—	X	—	—	X	—	X	—	C	3043
" 6	X	—	—	—	—	X	—	—	—	—	—	X	—	X	—	X	—	DM	140
" 7	—	X	—	—	—	X	—	—	—	X	—	X	—	X	—	X	—	C	457
" 8	—	X	—	—	—	X	—	—	—	X	—	—	—	X	—	X	—	C	457
" 9	X	—	—	—	—	—	X	—	—	—	X	—	—	X	—	X	—	DK	4608
" 10	X	—	—	—	—	X	—	—	—	—	X	—	—	X	—	X	—	DK	2634
" 11	X	—	—	—	—	—	X	—	—	X	—	—	—	X	—	X	—	C	1827
" 12	—	X	—	—	—	X	—	—	—	—	—	X	—	X	—	X	—	DM	178
" 13	—	X	—	—	—	—	X	—	—	X	—	—	—	X	—	X	—	DK	1263
" 14	—	X	—	—	—	X	—	—	—	—	X	—	—	X	—	X	—	DK	881
LXXXIX, 1	X	—	—	—	—	X	—	—	—	—	—	X	—	X	—	—	X	VS	1107
" 2	—	—	X	—	—	—	X	—	—	—	—	—	—	X	—	X	—	HR	465
" 3	—	X	—	—	—	X	—	—	—	—	X	X	—	X	—	X	—	HR	2188
" 4	—	—	—	X	—	—	X	—	—	—	—	X	X	X	—	X	—	HR	1447
" 5	X	—	—	—	—	X	—	—	—	—	X	—	—	X	—	X	—	HR	—
" 6	X	—	—	—	—	X	—	—	—	—	—	—	—	X	—	X	—	HR	1973
" 7	—	—	X	—	—	X	—	—	—	X	—	X	—	X	—	X	—	HR	978
" 8	—	—	X	—	—	—	X	—	—	—	—	X	X	X	—	X	—	HR	—
" 9	—	—	—	X	—	—	—	X	—	X	—	X	—	X	—	X	—	HR	1447
" 10	X	—	—	—	—	X	—	—	—	X	—	—	—	X	—	X	—	HR	1326
" 11	X	—	—	—	—	X	—	—	—	X	X	—	—	X	—	—	X	HR	1586
" 12	X	—	—	—	—	—	X	—	—	—	—	—	X	X	—	X	—	HR	—
" 13	—	X	—	—	—	X	—	—	—	—	—	—	—	X	—	X	—	HR	—
" 14	—	—	—	X	—	X	—	—	—	—	—	—	—	X	—	—	X	HR	334
" 15	—	—	—	X	—	X	—	—	—	—	X	X	—	X	—	—	X	HR	—
XC, 8	—	X	—	—	—	X	—	—	—	—	—	—	—	X	—	—	X	HR	1746
" 9	X	—	—	—	—	X	—	—	—	—	—	X	—	X	—	X	—	VS	1087
" 10	X	—	—	—	—	X	—	—	—	—	X	—	—	X	—	X	—	VS	815
" 11	—	X	—	—	—	X	—	—	—	—	X	X	X	X	—	X	—	DK	607
" 12	—	—	X	—	—	—	X	—	—	—	—	X	—	X	—	X	—	HR	6219
" 13	—	X	—	—	—	X	—	—	—	—	—	X	—	X	—	X	—	SD	1759
" 14	—	X	—	—	—	X	—	—	—	—	X	—	—	X	—	X	—	SD	—
" 15	—	X	—	—	—	X	—	—	—	—	X	—	—	X	—	X	—	HR	6213
" 16	—	—	X	—	—	X	—	—	—	—	X	—	—	X	—	—	X	DK	725
" 17	X	—	—	—	—	X	—	—	—	—	X	X	—	X	—	X	—	HR	6223
" 18	—	X	—	—	—	X	—	—	—	—	—	X	—	X	—	X	—	SD	1676
" 19	—	X	—	—	—	X	—	—	—	—	—	—	X	X	—	X	—	E	505
" 20	X	—	—	—	—	X	—	—	—	—	—	X	—	X	—	—	X	HR	1566
" 21	—	—	—	X	—	X	—	—	—	—	X	—	—	X	—	X	—	HR	516a
" 22	—	X	—	—	—	—	X	—	—	X	X	—	—	X	—	X	—	D	287
" 23	—	X	—	—	—	—	X	—	—	X	X	—	—	X	—	X	—	D	287
" 24	—	X	—	—	—	—	X	—	—	X	X	—	—	X	—	X	—	D	287
" 25	—	—	—	X	—	—	—	X	—	X	X	—	—	X	—	X	—	HR	5704a

Plate.	Slip.					Paint.				Paste.				Decoration.		Ware.			
	Light Red.	Dark Red.	Pink.	Cream.	Buff.	Black.	Purple-Black.	Brown-Black.	Red.	Mica.	Sand.	Lime.	Dirt.	Monochrome.	Polychrome.	Thick.	Thin.	Area.	No.
XCI, 1	—	×	—	—	—	×	—	—	—	—	×	—	—	×	—	×	—	HR	1035
„ 2	—	×	—	—	—	×	—	—	—	—	—	—	×	×	—	×	—	DK	606
„ 3	×	—	—	—	—	×	—	—	—	—	—	—	—	×	—	×	—	DK	1040
„ 4	×	—	—	—	—	×	—	—	—	—	—	×	—	×	—	×	—	DK	1893
„ 5	×	—	—	—	—	×	—	—	—	—	—	×	—	×	—	×	—	DK	1893
„ 6	—	—	—	×	—	—	×	—	×	—	—	×	—	×	—	×	—	HR	1422
„ 7	—	—	×	—	—	—	×	—	—	—	×	—	—	×	—	×	—	HR	5224
„ 8	×	—	—	—	—	×	—	—	—	—	—	×	—	×	—	×	—	DM	2866
„ 9	×	—	—	—	—	×	—	—	—	—	×	×	—	×	—	×	—	DK	814
„ 10	—	×	—	—	—	×	—	—	—	—	×	×	—	×	—	×	—	VS	2032
„ 11	—	×	—	—	—	×	—	—	—	—	×	×	—	×	—	×	—	VS	2032
„ 12	—	×	—	—	—	×	—	—	—	—	—	—	×	×	—	—	×	HR	5951
„ 13	—	—	×	—	—	×	—	—	—	—	×	—	—	×	—	×	—	VK	714
„ 14	×	—	—	—	—	—	×	—	—	—	—	×	—	×	—	×	—	HR	6215
„ 15	—	—	×	—	—	—	—	×	—	×	—	×	—	×	—	×	—	HR	6220
„ 16	—	—	—	×	—	—	×	—	—	—	×	—	—	×	—	—	×	HR	6227
„ 17	×	—	—	—	—	×	—	—	—	—	—	—	—	×	—	—	×	C	630
„ 18	—	—	×	—	—	×	—	—	—	—	×	—	—	×	—	×	—	HR	478a
„ 19	×	—	—	×	—	×	—	—	—	—	×	—	—	—	×	×	—	SD	2687
„ 20	×	—	—	—	—	×	—	—	—	×	×	—	—	—	×	—	×	DM	2864
„ 21	—	—	—	×	—	—	×	—	—	—	—	—	—	×	—	×	—	HR	1263
„ 22	—	—	×	—	—	×	—	—	×	—	—	×	—	—	×	×	—	C	1980
„ 23	×	—	—	—	—	—	×	—	—	—	—	×	—	×	—	×	—	HR	6221
„ 24	—	—	×	—	—	—	—	—	×	—	×	—	—	×	—	—	×	HR	1298
„ 25	—	—	—	×	—	—	×	—	—	×	—	×	—	×	—	—	×	HR	546
„ 26	—	—	×	—	—	×	—	—	—	—	—	—	—	×	—	—	—	HR	6220
„ 27	—	×	—	—	—	×	—	—	—	—	—	×	—	×	—	×	—	L	1093
„ 28	×	—	—	—	—	×	—	—	—	×	—	×	—	×	—	×	—	C	3124
„ 29	×	—	—	—	—	×	—	—	—	—	—	×	—	×	—	—	—	HR	5903
„ 30	×	—	—	—	—	×	—	—	—	—	×	×	—	×	—	—	×	DM	37
„ 31	—	×	—	—	—	×	—	—	—	—	—	—	—	×	—	—	—	HR	2363
„ 32	×	—	—	—	—	×	—	—	—	—	×	—	—	×	—	×	—	DK	700
„ 33	×	—	—	—	—	×	—	—	—	—	×	—	×	×	—	—	×	HR	1655
„ 34	—	×	—	—	—	—	—	×	—	—	—	×	—	×	—	×	—	HR	6219
XCII, 1	—	×	—	—	—	×	—	—	—	—	×	×	—	×	—	×	—	C	3043
„ 2	—	—	—	×	—	—	—	×	—	—	×	—	—	×	—	—	×	SD	2686
„ 3	—	—	—	—	×	×	—	—	—	—	—	×	—	×	—	×	—	D	151
„ 4	×	—	—	—	—	×	—	—	—	—	—	×	—	×	—	×	—	HR	6214
„ 5	×	—	—	—	—	×	—	—	—	—	×	—	—	×	—	×	—	HR	5967
„ 6	—	—	×	—	—	×	—	—	—	×	×	—	—	×	—	×	—	DK	2782
„ 7	×	—	—	—	—	×	—	—	—	×	—	—	×	×	—	—	×	SD	2297
„ 8	—	×	—	—	—	×	—	—	—	×	—	—	—	×	—	—	—	HR	6216
„ 9	—	×	—	—	—	×	—	—	—	—	—	—	—	×	—	×	—	VS	1596
„ 10	—	×	—	—	—	×	—	—	—	×	—	—	—	×	—	×	—	VS	2349
„ 11	—	—	×	—	—	—	—	×	—	—	—	×	—	×	—	×	—	C	2776
„ 12	×	—	—	—	—	×	—	—	—	×	—	×	—	×	—	—	—	D	473
„ 13	—	×	—	—	—	×	—	—	—	—	—	×	—	×	—	×	—	C	1798
„ 14	×	—	—	—	—	×	—	—	—	—	—	—	—	×	—	×	—	HR	6224
„ 15	×	—	—	—	—	×	—	—	—	—	—	—	—	×	—	—	—	HR	804
„ 16	—	—	—	×	—	×	—	—	—	—	—	—	×	×	—	×	—	HR	6222
„ 17	×	—	—	—	—	×	—	—	—	—	—	×	—	×	×	×	—	HR	852
„ 18	×	—	—	—	—	×	—	—	—	×	—	—	×	×	—	×	—	HR	6218
„ 19	—	×	—	—	—	×	—	—	—	—	—	×	—	×	—	—	×	HR	1182
„ 20	×	—	—	—	—	×	—	—	—	—	—	×	—	×	—	—	×	VS	1107
„ 21	—	—	—	×	—	—	×	—	—	—	—	×	—	×	—	—	×	HR	5166
„ 22	—	—	—	×	—	—	×	—	—	—	—	×	—	×	—	×	—	HR	2553
„ 23	×	—	—	—	—	×	—	—	—	—	—	—	—	×	—	—	—	HR	6226
„ 24	—	×	—	—	—	×	—	—	—	—	—	×	—	×	—	×	—	HR	4786
„ 25	×	—	—	—	—	—	×	—	—	—	—	—	—	×	—	×	—	DK	2021
„ 26	—	—	—	×	—	×	—	—	—	—	—	×	×	×	—	×	—	HR	1831
„ 27	—	—	×	—	—	—	—	×	—	—	×	—	—	×	—	×	—	HR	478c

Chapter XVIII

FIGURINES AND MODEL ANIMALS

Human Figures (Pls. XCIV and XCV)

Semi-nude figurines.

A CONSIDERABLE number of pottery figurines has been found at Mohenjo-daro at all levels. In almost every case they are female figures, nude except for a narrow girdle around the loins. In most cases this girdle is quite plain (Pl. XCV, 26 and 28); it is sometimes decorated in front with two or more medallions (Pl. XCIV, 14; Pl. XCV, 11), which may represent some kind of brooch or fastening or may be simple ornaments. The girdle itself is either a simple strip of some woven material or perhaps twists of material grouped together to form a band or swathed several times round the body (Pl. XCIV, 14; Pl. XCV, 11 and 18). It is possible that the latter type of girdle was not made of cloth at all, but that it was intended to portray strings of beads; there is but little difference between some of these girdles and undoubted representations of strings of beads.[1] The fine girdle of carnelian and bronze beads seen in Pl. CLI, *b*, may have been worn around the loins.[2]

The semi-nudity of these figures is in contrast with similar figures from other countries, which even up to a late period were usually entirely nude. It may be that modesty on the part of their makers was the cause of their being partially draped.

Head-dress.

Many of the female figures wear a very distinctive head-dress, which rises fan-like from the back of the head (Pl. XCIV, 12 and 14; Pl. XCV, 8, 26, and 28). In some cases this head-dress appears to rise direct from the head (Pl. XCV, 26); in others, it forms part of a coif that falls down at the back of the head, as in Pl. XCIV, 14, where the head-dress is held in place by a band around the forehead.[3]

Pannier-like objects.

A peculiarity of these head-dresses is the pannier-like object worn on each side of the head. This feature is present in most of the figurines and is difficult to explain. At first sight, it appears to be due to some malformation of the ear caused by an ear-plug of unusual size. In some of the figures, however, it is so large, e.g., in Pl. XCIV, 1, that it must have been made from some light material, such as linen, cotton, or wool. It should be noted that there was once a similar attachment on the other side of the head shown in Pl. XCIV, 1.

In some of the figures (Pl. XCIV, 12; Pl. XCV, 6, 7, and 8, etc.), these pannier-like

[1] Two examples are known from elsewhere of similar figures wearing cinctures around the loins, not at all unlike those worn by the Indus Valley figurines. Hall and Woolley, *Ur Excavations*, vol. i, pl. xlviii; *Jour. Eg. Arch.*, 1929, pl. vii, fig. 4.

[2] I do not think that it was ever intended to dress these figures, for, if so, the jewellery that is always represented would have been concealed.

[3] Compare some of these head-dresses with head-dresses found at Assur. See Andrae, *Die Archäischen Ischtartempel in Assur*, taf. 52, figs *m* and *p*. Also, p. 55, fig. 41.

objects are supported by bands carried round them and also around the head, which suggests that they were attached in some way to the ears, but needed extra support, as do the very heavy nose-rings worn in Sind to-day which are supported by cords tied to the hair above the forehead.

Cones. That the very curious cone on each side of the face in Pl. XCV, 26, is really a part of the head-dress and not affixed to the face is shown by comparison with Pl. XCV, 13, and Pl. XCIV, 14. These cone-like projections are perhaps two corners of the coif. On the other hand, an ornament of some kind may have been attached to the coif ; and if so, its shape recalls the hollow gold cone which was found with other jewellery in the DK Area and is illustrated in Pl. CXLVIII, *a*, 2. This cone, which is discussed in Chapter XXVI on the jewellery of Mohenjo-daro, has a loop inside the apex presumably for sewing to a garment. A very similar ornament has since been found, made in faience, also with a loop for attachment to the clothing.

Jewellery. Most of the figurines are loaded with jewellery, which is sometimes cleverly portrayed with little effort. In the longest of the strings worn by the figure shown in Pl. XCIV, 14, each bead is represented separately by a pellet of clay. The highly ornamental collar worn by this figure looks a most uncomfortable affair. A similar collar, if anything a little higher, is seen in No. 1 on the same plate.

Unfortunately, most of the arms and legs of the figurines are missing, but those that remain (Pl. XCIV, 6, 7, 8, and 11 ; Pl. XCV, 26 and 27) are adorned with armlets, bangles, and anklets. These ornaments may sometimes have been made of metal, but in all probability the majority of them were shell. The custom of wearing so many shell bracelets as almost to conceal the whole of the forearm is very common in India at the present day.

Sacred images. From their resemblance to one another, and the frequency with which they occur, there is no doubt that these female figurines with their elaborate head-dresses and jewellery are sacred images. They are extremely common in all parts of the site and are considerably better made than the other figures, probably being made by the professional potter rather than at home.

Probably Mother Goddess. There is reason to think that the head-dress worn by these figures was also that worn by the better-class inhabitants of Mohenjo-daro, for it has always been customary to dress a deity in a familiar costume.[1] What particular deity these female figures represent we do not as yet know ; but it is probable that she was a goddess with attributes very similar to those of the Great Mother Goddess, "Lady of Heaven," etc., and the special patroness of women, whose images are found in large numbers at so many early sites in Elam, Mesopotamia, Egypt, and the Eastern Mediterranean area.[2] Probably there was one of these images in one of the rooms of every household. Unlike some of the figurines found elsewhere, there is no evidence that they were of a funerary nature.[3]

Fusion with Cow Goddess. In view of a possible association of ideas between these Indus Valley figurines and those of Mesopotamia and Elam, and again of Egypt, it may be as well to mention here that Mr. Hornblower is of the opinion that the cult of the mother goddess in Egypt was an inheritance from the late Palæolithic age, and also that a Mesopotamian form of the same goddess was introduced in the middle predynastic period, after which it became fused with the worship of the cow goddess, which he regards as also of Mesopotamian origin. In

[1] I allude, of course, to the head-dress in particular. It cannot be imagined that the women of the Indus Valley civilization habitually wore such scanty body-covering.

[2] For a full account of the Egyptian figurines I would refer the reader to Mr. Hornblower's valuable article, "Predynastic Figures of Women and their Successors," in *Jour. Eg. Arch.*, May, 1929, pp. 29–47.

[3] For the worship of the Mother Goddess, see pp. 49–52 *supra*.

Mesopotamia the cow was the symbol of the goddess Nin-khursag, who bears the character of a mother amongst her other attributes,[1] and this is also true of the goddess Hathor in Egypt.

Rarity of male figures.

The comparative paucity of male figures is significant. For some reason they were not popular in clay, excepting the few rough examples made by children obviously as playthings. The figure illustrated in Pl. XCIV, 11, may perhaps represent a deity.

Caps.

We have evidence from the clay figures that in certain cases women also wore a close-fitting cap with a long point which was allowed to hang down at one side (Pl. CLIII, 25). A very similar cap was sometimes worn by men, but the point, instead of hanging down the side, either falls over the top of the head, where it is secured by a rolled fillet (Pl. XCIV, 11), or terminates in a coil (Pl. XCIV, 4). It is possible, however, that the coil at the back of the head in the latter figure may be intended to represent hair. The same may be the case with the preceding figure, No. 2, on the same plate. This male figure either wears a puggaree, or his long hair is coiled around the top of his head.

Figures usually broken.

It is rarely that we find one of these figures, whether male or female, in perfect condition. Usually only the heads are found, and not the bodies, whereas my experience in Mesopotamia with figurines of a similar nature was that the bodies are found more frequently than the heads. Why so many of the figures are broken it is difficult to explain ; they are both substantially made and well baked, and an ordinary fall would hardly be enough to break them. It has been suggested that the breakage of these figures in other countries might be due either to a change of belief or to an invader seeking to introduce another religion. A change of belief would naturally be a slow process, and it is impossible to imagine an invader entering every house and breaking up the image or images in it. His religious zeal would surely be confined to the temples and larger buildings.

Eyes.

In all the pottery figures of human form the eyes were represented by pellets of clay, usually oval in shape and in some cases markedly so. The eyes of the animal figures are in nearly every case perfectly round. Only on one or two of the human figures, however, do we find the pronounced elongation of the eye which characterizes some of the stone statues. The use of pellets instead of incisions to represent the eye is a feature of the pre-Sargonic figurines of Kish, especially those which formed the handles of a type of pottery jar dated to about 3000 B.C.[2]

At Kish, the eye-pellets were sometimes incised to represent the pupil, but we only find two examples of this refinement in the figurines of Mohenjo-daro (Pl. XCV, 14 and 15). At Kish the mouth was but seldom represented, and then only by an incision. In the Mohenjo-daro figurines, however, the mouth is cleverly portrayed by an elongated pellet incised with a horizontal line to make the upper and lower strips of the pellet simulate lips. In only one case are the ears represented, in which respect the figurines resemble the archaic pottery figures of other countries. They must have been concealed beneath the appendages of the head-dress.

Mouths and ears.

Noses.

As in all primitive figures, the nose, always prominent,[3] is shown by a mere pinching-up of a portion of the clay and not by sticking on a piece. In every case the bridge of the nose is on a line with the forehead ; and though in rough work like these pottery figures this may be

[1] Hall and Woolley, *Ur Excavations*, vol. i, pp. 141–3.

[2] Mackay, *Report on the Excavation of the "A" Cemetery at Kish*, pt. i, pl. 2. I have not been able to find this particular technique elsewhere than in early India and Mesopotamia. It does not occur, as far as I can trace, in the early figurines of Egypt. The use of beads and pieces of shell for this purpose is fairly common in most countries.

[3] It is questionable whether the noses of these figures are indicative of the size of the natural feature. With the exception of the figure in Pl. XCVIII, the noses of the stone statues are not unduly large. Being such a prominent feature it would naturally be over-emphasized in a plastic material.

thought of little importance, it is noteworthy that exactly the same feature is seen in the stone statuary illustrated in Pls. XCVIII, XCIX, and C.

Red paint. All the figurines are made of either a light-red or straw-coloured ware, and are usually well baked. Marks of red paint on some of them, e.g., Pl. XCIV, 2, 5, and 11, suggest that they were once entirely covered with this colour. The majority show no trace of paint; but evidence of colouring would tend to disappear in a salty soil.[1] In Pl. XCIV, 11, however, traces of a necklace painted in red still remain round the neck, and bands of the same colour around the arms may represent bracelets. **Solid make.** The great majority of the figurines are of solid material throughout. With the exception of No. 23 in Pl. XCV, and possibly also the masks, they are made by hand without the aid of a mould. Certain figures, however, as Nos. 24, 29, and 30 in Pl. XCV, are hollow; in shape, also, they differ greatly from the ordinary figurines.

A more detailed description of the figurines illustrated here follows :—

Masks. *Pl. XCV.*—Nos. 1, 2, and 3 in Pl. XCV are hollow clay masks, which were roughly made in a mould. The first (E 958) is 1·85 inches wide. The second (C 2739) considerably smaller, and the third (E 517) 1·75 inches wide. The first and third were found in Trial Trench E, DK Area, and the second in Block 2, Section B, DK Area. Two of them still have short horns, which were also present in the third, but have been broken away. The eyes of all the three masks are elongated and the rudimentary animal-ears perforated, either for earrings or to fasten the heads to some support. The fact that these heads are hollow at the back also suggests that they were intended to be attached to something, possibly a kind of rag image whose form was concealed by drapery. On the other hand, the presence of horns strongly suggests that these masks represented a deity rather than that they were ordinary dolls. Indeed, they recall the horned figures on two of the edges of seal 356, which have been likened to the hero Enkidu, who appears so frequently on the Sumerian seals.[2] These masks should also be compared with the animal masks in Pl. XCVI, 5 and 6.

All these masks were made of light-red ware moderately baked. No. 3 shows evidence of having once been painted red, but there are now no traces, even if it ever existed, of colour on the other two examples. No. 1 was found 7 feet, and No. 3, 15 feet, below the surface. They can, therefore, be dated to the Late and Intermediate Periods; possibly, however, the third is of earlier date.

No. 4 (L 4) is of very rough workmanship. The eyes are elongated pellets and the mouth another pellet incised horizontally. It is 2·75 inches high, and was found in Room 100 in the L Area, at the Intermediate level.

Male figure. No. 5 (DK 485) is 1·5 inches high and of much better workmanship than No. 4. Unfortunately, it is broken; but from the small breasts we may perhaps surmise that this figure is that of a male. It was found 1 ft. 9 in. below the surface and belongs to the Late Period. Court north of Chamber 27, Block 11, Section C, DK Area.

No. 6 (C 3067) is a well-preserved head, 2·3 inches high, which shows that the front of

[1] It is curious how pottery figurines in many parts of the ancient world were coloured red. At Mohenjo-daro this does not seem to be an attempt to simulate the natural colour of the skin, for most of the figures are made of a light-red ware. It was possibly a sacred colour. Model animals, some of which were apparently dedicated to the gods, were frequently coloured red. Sacred images in modern India are generally painted with red lead mixed with ghee. The colour used on the figures of Mohenjo-daro is haematite.

[2] These human heads with horns are not unlike some that have been found at Ur. *The Times*, 25th January, 1929. Possibly the same deity is represented. The example from Ur is the head of a copper statue, whereas the objects from Mohenjo-daro are all moulded in clay.

the fan-like head-dress was sometimes decorated. Level, 2 feet below surface. Block 2, Section C, DK Area.

No. 7 (DK 2385) is a little smaller than No. 6. The pannier-like objects on either side of the head are supported by a double band across the forehead. Level, 2 feet below surface. Room 2, Block 1, Section B, DK Area.

No. 8 (DK 2189), which is 2·1 inches high, resembles Nos. 6 and 7 in many respects. Level, 7 feet below surface. Room 12, Block 16, Section C, DK Area.

Beard.

No. 9 (DK 2505), which is 2 inches high, represents a man with a short beard and long hair coiled up at the back of the head in the style seen on some of the stone statues. The curls of the hair are represented by pricking. This head is made of light-red ware and was once washed over with dark-red paint. It was found at a depth of 13 feet below the surface and appears to be of the earlier Intermediate Period. The short beard is very Egyptian-looking; but it is not suggested that this head represents an inhabitant of that country, especially as one of the stone statues from Mohenjo-daro appears to possess a small beard of very much the same shape. (Pl. XCIX, 7, 8, and 9.) Street 1, Block 3, Section B, DK Area.

Kilt.

No. 10 (C 2895) is a mere remnant of a figurine, we do not know whether of a man or woman. Its interest lies in the fact that the curious kilt, apparently made of locks of wool, very closely resembles the *kaunakès* worn by the early Sumerians.[1] This figure was originally coloured red, and what is left of it is 2·7 inches high. Judging by the level at which it was found (10 feet), it appears to be of the Intermediate Period. Block 8, Section C, DK Area.

Girdle.

No. 11 (VS 2276), though badly broken, is illustrated to show the girdle of four bands or twists of material decorated in front with two medallions, one of which may be a fastening. What is left of the upper part of the figure shows the usual elaborate necklace. Level, 6 feet below surface. Room 76, House XIII, Block 2, VS Area.

Seated figure.

No. 12 (HR 3690) is a woman seated on her haunches and holding in her lap a platter that presumably contains small loaves of bread. This figure has no ornaments, but wears the same fan-like head-dress as other female figures. From the roughness of its make, it appears to be the work of a child. It is about 3 inches high. Level, 10 feet below surface. House XVIII, Block 4, Section B, HR Area.

No. 13 (VS 1369) is 2·75 inches high. The usual high head-dress is worn, and there appears to be a twisted strand of hair hanging down one side of the head. The ends of the coif appear on either side of the face, and a double-stringed necklace with pendants is worn tight around the throat. Level, 2 feet below surface. House XXVI, Block 7, VS Area.

Pupils of eyes represented.

No. 14 (L 78) is unlike any other figure that has been found at Mohenjo-daro. It is 2·4 inches high and represents a human figure with round pellets for eyes. Each pellet has a hole in the centre to represent the pupil, a very unusual feature in the pottery figures of Mohenjo-daro, but well known in early Babylonian figurines. The mouth is represented as wide open. The left arm is missing, and the right arm is held across the stomach. A small hole through the neck from back to front suggests that the figure was once attached by its means to some other object, or else suspended on a string. From the very rough workmanship of this model, it appears to have been made by a child It was found in Court 121 in the L Area near the surface of the ground, and belongs to the Late Period.

[1] An exactly similar garment is worn by a clay figure from Harappā. The *kaunakès* was made of suspended loops of wool hanging from a kilt of the same material. It commenced with one fringe which was multiplied as time went on. The same type of garment was worn by the proto-Elamites (*Mém. Dél. en Perse*, t. xiii, pl. 33), and it seems also to be worn by a figure on the gold cup from Asterabad in Turkestan. *Archæologia*, vol. xxx, pp. 248–55.

Nos. 15 and 16 (L 722) are two views of a figure which also seems to be a child's work. The eyes are very elongated and represented by means of a horizontally incised line as half-closed, resembling in this respect the eyes of the steatite statue seen in Pl. XCVIII. The hairs of the short beard are indicated by incised lines, but the long locks of hair at the back of the head are represented by a combination of strips of clay and incised lines. This interesting head, which is 2·45 inches high, was found 2 feet below the surface in Chamber 7 of the L Area, and belongs to the Late Period. **Half-closed eyes.**

No. 17 (C 2507) is a broken pottery plaque, 3·3 inches in length, upon which a male figure is roughly modelled. The arms are handless, but an object resembling a very broad hand lies beside the ankles, and it is possible that a similar object has been broken off from the other side. The head, unfortunately, is missing.[1] Level, 9 feet below surface. Section C, DK Area. **Plaque.**

No. 18 (DK 1380) is a badly mutilated figure, 3·7 inches high, with a loin-band swathed three times around the body. Level, 3 feet below surface. Chamber 3, Block 14, Section C, DK Area.

No. 19 (HR 5866). This is a delightful little figure of a boy, in seated attitude, clasping both knees. The figure is 2·15 inches high and is of the Late Period. Room 17, House L, Block 7, HR Area. **Seated boy.**

No. 20 (HR 5986) is a figure of a woman dressed in a short kilt and clasping a suckling baby with both arms. The figure measures 3·6 inches high. This is perhaps the work of a child. Level, 8 feet below surface.[2] Room 85, House IX, Block 2, HR Area.

No. 21 (DK 2014) is 2·6 inches high. The pellet of clay on each cheek (that on the right cheek has fallen off) was clearly the same as the cone-shaped object on each side of the face of No. 26. The head-dress is slightly different from the usual fan-like affair, and, though now badly broken, seems to have been ornamented with a ribbon-like band. What may represent a strand of hair is seen on the right of the face. Level, 4 feet below surface. Room 10, Block 2, Section B, DK Area.

Nos. 22 and 25 (C 2471) are two views of a little figure now 2·75 inches high, which is perhaps the bust of a male, as the breasts are rudimentary. The curious arrangement of the hair of this figure is of great interest. A long coil is wound round and round on the top of the head and there are two other coils, one on either side.[3] The custom of wearing coiled plaits at the sides of the head is well known from Babylonian statuary and I have observed the same myself in a silver statuette of neo-Babylonian date at Kish, where the hair was dressed in the same fashion. Another unusual feature of this little figure is the scarf which is wound twice round the neck with its ends left to hang down in modern choker fashion. The figure also wears a tight necklace with pendants in front. Level, 1 foot below surface. **Coiled hair.**

No. 23 (VS 1555) is a curious head with a high, conical head-dress. The eyes are elongated and instead of being made with pellets of clay are represented by means of incised markings. Nor were the lips made by adding strips of clay. The base of the neck is rounded off and there is a hole 0·6 in. deep and 0·1 in. in diameter in its centre, showing that it was once affixed to a stick or to a body by means of a dowel. The present height of the head is 1·85 inches, and it is made of a well-baked, straw-coloured clay. This head would seem to have been made in a mould. Level, 1 foot below surface. From Room 76, House XIII, VS Area. I incline to regard this head as belonging to a much later period. **Incised eyes.**

[1] It is possible that this figure is represented as on a couch.

[2] Sir Aurel Stein found a very similar figure at Mehi in southern Balūchistān. He is of the opinion that the figure represents a goddess.

[3] A Harappā figure has the same arrangement of hair.

Tufts of hair. No. 24 (VS 961), shown in profile, is 3·8 inches high, hollow, and made of a light-red clay. The arms of this figure are reversed. Instead of being held in front, they are clasping what looks like the skull of an ox held behind the back (Pl. CXVIII, 15). The nose is long and beak-like, but there is no trace of a mouth. The head is covered with little knobs, as if to represent isolated tufts of hair. Level, 10 feet below surface. House XXVII, Block 7, VS Area.

Anklets. Nos. 26 and 27 (HR 5551) are front and back views of a figure, 7·93 inches high, that was found at a depth of 1 ft. 6 in. in Room 86, House 38, Section B, of the HR Area, which is of the Intermediate Period. This figure has the usual pellets for eyes and incised strip of clay for the mouth. On each cheek there is a cone-shaped object which resembles the gold cone in Pl. CXLVIII, *a*, 2. These objects were possibly attached to some part of the head-dress which is not shown. A tight, bead necklace of two strings, with pendant beads attached to the lower string, encircles the neck, and another looser necklace is worn below. The sole garment is a band of some woven material around the loins. Each ankle is adorned with an anklet of two coils, possibly representing ornaments that in actual fact were made of metal.

This figurine is the best preserved of its kind that we have as yet found at Mohenjo-daro. Though it had been broken into several pieces, we were fortunate enough to find the limbs, and so repair the figure.

No. 28 is 7 inches high. This figure wears a narrow girdle about the loins and the usual high fan-like head-dress. What seems to represent a lock of hair hangs down the left side of the face, and a tight necklace is worn around the throat. Section A, DK Area.

No. 29 (VS 529), which is 3·65 inches high, has very crude features. In shape it closely resembles Nos. 24 and 30, though no ornaments are worn and the arms and breasts are merely dabs of clay. It is interesting to note, however, that this type of figure wears the same head-dress as the ordinary figurines, showing that the modeller was moulding a figure with which he was familiar.

Because of the swollen bodies of the figures shown in Nos. 24, 29, and 30, it was at first thought that they were rattles ; but this is not the case, and only No. 24 is definitely known to be hollow. No. 29 was found at a depth of 12 feet below the surface in the court of House XXVII, Block 7, VS Area.

Steatopygia. The great exaggeration of the buttocks in all three figures suggests steatopygia,[1] but as a rule this condition of body, which is especially common among the Hottentots, extends also to the thighs, which in the case of No. 30 especially is not very apparent.

Earrings. No. 30 (DK 3158), which is 4·9 inches high, is the figure of a woman with a very curious turban-like head-dress,[2] the back part of which somewhat resembles the head-dress worn by most of the other female figures. The front portion, however, is decorated with what appears to be twists of woven material. An earring hangs from each of the very rudimentary ears, and there is a tight necklace around the neck. The eyes, nose, and mouth, resemble those of the other figures described. It is possible that this figure may represent a dwarf kept for the amusement of some wealthy person, as was frequently done in ancient Egypt. Level, 1 ft. 6 in. below surface. Street between Blocks 2 and 3, Section B, DK Area.

Eyebrows. *Pl. XCIV.*—No. 1 in Pl. XCIV (VS 1947) is now 4 inches high. It is a very fine head with a very exaggerated form of the pannier ornament on one side. A similar feature once existed on the other side of the head, but has been broken off. There is considerably more

[1] Note also the figures in *Mém. Dél. en Perse*, vol. i, pl. vii, figs. 6 and 8.

[2] This head-dress approximates very closely to the heavy turban so frequently worn at this day in India. The women, however, never wear such a heavy head-dress, and it is, therefore, curious to find it on a female figure from Mohenjo-daro.

detail in the features than in any of the other figurines that have been found up to the present, probably largely because this head is of unusual size. The eyebrows are indicated by strips of clay, while above them other strips with vertical and horizontal lines incised upon them are clearly an attempt to represent the V-shaped fillet like those seen in Pl. CLI, *a*, 6, 7 and 8. Above this fillet are either other fillets or bands of material fastening the head-dress in position. The latter is now missing, but a fragment that remains suggests that it was of the usual fan-like shape. The very elaborate dog-collar of four strings of beads should be noted[1]; below it other strings hang loosely. Level, 6 feet below surface. Intermediate Period. Room 13, House XXII, Block 3, VS Area.

No. 2 (HR 5312) is a head and shoulders only, now 2·95 inches high. It is coated with a red wash. The hair, which is parted in the middle, is brought round the back into a long rope that is twisted over the top of the head. Two flat round pellets on the sides of the head probably represent ears; they are partially hidden by the hair. It is impossible to say whether this is a male or female head. Level, 4 feet below surface. East of Building XLVIII, Block 6, HR Area.

Nostrils. Nos. 3 and 4 show a figure 4 inches high, covered with a red wash. The eyes are very elongated. The nostrils are shown by holes—an unusual refinement in pottery figurines. This figure either wears a cap with a pointed end that is rolled up, or hair twisted into a coil.

Mongolian eye No. 5 (HR 1483), which is now 4·85 inches high, lacks both arms and legs. The usual high head-dress is worn, with the addition of large pannier-like objects on either side of the head. This figurine was originally painted red and a good deal of the colour still remains. A very unusual feature is the Mongolian slant of the eyes. Like the majority of these figurines, it wears a short loin-cloth. Level, 7 feet below surface. Chamber 136, House X, Section B, HR Area.

Bronze dancing-girl. Nos. 6, 7, and 8 (HR 5721) are three views of a bronze figure, 4·25 inches high, that was found 6 ft. 4 in. below the surface in Room 40, House LV, Section B, of the HR Area. It represents a dancing-girl with the right hand resting lightly on her hip. The other hand, which is, unfortunately, badly corroded, rests upon the left leg just above the knee. The left arm is almost entirely covered with bracelets, whereas on the right there are only a few, probably for the reason that this arm would be more used in dancing. The arrangement of the hair is very curious. It is worn in short crimped curls on the top of the head, and an exceptionally long and thick lock starting from the left side is brought round behind the head and over the right shoulder. As in some of the stone statues, the eyes are half-closed, and the expression on the face suggests disdain. A necklace, whether of beads or a thick cord, has three pendants or amulets suspended from it. Though the proportions of this figure are not strictly correct, the arms and legs being much too long for the body, it is nevertheless an exceptionally fine piece of work for such an early period. The abandon expressed in face and limbs is quite realistic.

This figure, which is of cast bronze, belongs to the Intermediate Period. It is also shown in Pl. CXLIV, 5 and 6, in the state before it was cleaned.

No. 9 (VS 2165), whose head, arms, and feet are missing, is now 5·3 inches high. It resembles the other figures except in the unusual depth of the skirt, which is apparently overlapped in front. Level, 4 ft. 6 in. below surface. House VIII, Block 2, VS Area.

No. 10 (DK 3188) is, I think, part of the figure of a man with shaven head. It is now only 2·1 inches high. Level, 3 feet below surface. Chamber 4, House III, Block 2, Section B, DK Area.

[1] This fashion of collar is also known in Sumer. *Archaeologia*, vol. lxx, fig. 13, No. 2, pl. viii.

Male figure wearing jewellery.

No. 11 (HR 3568) is now 5·6 inches high. It represents a male figure entirely nude but for an extraordinary conical cap whose tip is brought down in front under a rolled band around the forehead, which may be the bottom of the cap itself. Red lines painted round the arms probably represent bangles, and a scarf or necklace is painted in the same colour. This figurine provides additional evidence that some at least of the male inhabitants of Mohenjo-daro wore very much the same kind of jewellery as did the women. It is noteworthy that the eyes are round instead of being the usual oval in shape. Level, 5 ft. 6 in. below surface. Intermediate Period. Lane 10, between Blocks 8 and 9, HR Area.

Ears.

No. 12, now 3·8 inches high, is coated with a red wash. The usual high head-dress is worn, but the projections on each side of the face resemble ears rather than the pannier-like objects present on most of the figurines. They are flat and decorated in front with strips of clay which may possibly be intended to represent the lobes of the ear. The eyes are very elongated and have a Mongolian obliqueness. There is a curious projection on the forehead of the figure, which may be a part of the head-dress and which is kept in place by a band worn around the forehead. To this forehead-band strips of clay are secured, which apparently hold up the ear-like projections on both sides of the head.

Drum.

No. 13 (C 1717) is an interesting figure of a woman holding some kind of utensil, or perhaps a drum, under her left arm. The figure wears a necklace, but is otherwise exceedingly roughly made and is evidently the work of a child. Level, 17 feet below surface. Section C, DK Area.

Unusual figure.

No. 14 (DK 2384) is now 7·5 inches high. Despite the legs being broken off, it is one of the finest figurines of its kind that has been found at Mohenjo-daro. The fan-like head-dress is clearly the upper part of a cap which fits over the head and hangs loosely at the back. This cap is held in position by a band passed round the forehead, and it is probable that the fan-like portion of this head-dress was supported by a frame inside. On each side of the head tufts of hair peep out from inside the coif.

The usual tight "dog-collar" necklace, which was presumably made of beads, is worn round the throat, and there are in addition five necklaces, of which the lowest hangs to the level of the loin-band. The beads of this string are indicated by means of small pellets stuck on the thin strip of clay which represents the cord of the necklace. Armlets are worn on the upper arms, but of bracelets and anklets we know nothing owing to the limbs being broken off. The girdle is a simple affair of three bands decorated with medallions in front, which were probably of metal and served to fasten the belt. This figure is of especial value as showing how great was the love of adornment among the women of Mohenjo-daro; for as they dressed themselves, so would they adorn the figures of their deities.[1] Found 2 feet below surface in Chamber 15, House IV, Block 2, Section B, DK Area.

Animal Figures (Pls. XCVI and XCVII)

Animal figures are found in large numbers on our site. They are chiefly made of pottery, figures made of faience being scarce; shell, too, was sometimes used, but only rarely.

Mistakes made by modellers.

The great majority were without doubt made as toys for children, and judging by the roughness of their workmanship were frequently the handiwork of the children themselves. Despite the powers of observation that are generally possessed by children, some very

[1] This figure with its attenuated waist and exaggerated hips resembles the Mother-Goddess figures of other countries. Compare it, for example, with the Egyptian figure in *Jour. Eg. Arch.*, May, 1929, pl. ix, fig. 2. The buttocks, however, in our figure are not unduly pronounced.

curious mistakes were made. For instance, a hare is provided with a long tail, and cattle frequently with short tails.

Some of the figures were evidently made by a potter, e.g., Pl. XCVI, 5 and, 6 and Pl. XCVII, 23 and 26.

Popular animals.

By far the most popular animal was the short-horned bull, followed by the humped or Brāhmanī bull. Next in popularity came the ram and the rhinoceros. The dog was not quite such a favourite, but it must be admitted that it is sometimes difficult to identify some of the animals. A dog might, indeed, easily be mistaken for a bull in some of the more roughly made figures, as the ears are often modelled to look like horns. No. 6 in Pl. XCVII is a ram and not a dog, and No. 19 in the same plate certainly represents a bull.

Short-horned bull.

The great popularity of the short-horned bull is significant. It is sometimes represented, as in Pl. XCVII, 23, with its neck swathed in garlands, but in most cases its head is slightly lowered to the position in which it is seen on the seals (Nos. 308–26). Amongst many ancient peoples the bull, doubtless because of its great strength, was the emblem of a god, and it is probable that the same idea prevailed among the people of the Indus Valley civilization. At the present day, both the bull and cow are sacred animals amongst the Hindus.[1]

Brāhmanī bull.

The slightly less popular Brāhmanī or humped bull (*Bos indicus*) also appears on the seals (Nos. 327–40). There is still some doubt as to the country in which this animal originated, whether it was in Africa or India. These figures, however, prove that the humped variety was known in India in very early times. The same animal appears on a carved vessel of bitumen of the Second Period of Susa,[2] but according to Ward[3] it did not appear in Mesopotamia until about 1000 B.C. On a fragment of sculpture, however, of the period of Gudea (about 2400 B.C.) a humped bull is certainly delineated,[4] and on a seal of the fourteenth century, of the time of Nazi-Maruttash, a yoke of humped oxen is depicted.[5] The humped bull is also found at Gerar, in Palestine, in the form of clay figures, dated by Petrie to about 950 B.C.[6, 7]

Found in Balūchistān.

The occurrence of this animal at both Mohenjo-daro and Susa implies communication between these two civilizations, and, moreover, suggests that intercommunication took place by land rather than by sea. Models of humped cattle were found by Sir Aurel Stein in both northern and southern Balūchistān on Chalcolithic sites as well as on those of later date. There is, therefore, some reason to believe that humped cattle are indigenous to India rather than to Africa.[8]

Ram.

The ram was more commonly made in faience than in pottery, but for what reason it is difficult to say. These faience figures were not pierced for a cord, and the majority are also over-large to be worn as personal ornaments. The faience specimens are usually exceedingly well made (Pl. XCVII, 1, 2, 3, and 5), and are always shown in a crouched position. This

[1] In Vedic mythology the cow is by far the more important animal. At Mohenjo-daro, Harappā, and in Balūchistān, the bull is ubiquitous, the cow conspicuous by its absence. Cf. Macdonell, *Vedic Mythology*, pp. 150–1. The animal represented in the Seals 308–26 appears to be the Indian bison (*Bos gaurus*). Cf. p. 70 *supra*.—[Ed.]

[2] *Mém. Dél. en Perse*, t. xiii, pl. xxxiv. For other examples from Elam, see figs. 13 and 14, p. 110, t. xx, of the same series.

[3] *Seal Cylinders of Western Asia*, p. 416.

[4] King, *History of Sumer and Akkad*, p. 69, fig. 21.

[5] King, *History of Babylon*, p. 175, fig. 40.

[6] *Ancient Egypt*, 1928, pt. iv, p. 101.

[7] It is to be doubted whether the coloured pottery figure of a bull, found by Herzfeld in Irān and dated by him to the early Bronze period, is really *Bos primigenius*. It appears from the illustration to have a definite hump and may possibly be an Indian breed. *Illustrated London News*, 1st June, 1929, fig. 24.

[8] It is not found in Egypt until the Eighteenth Dynasty. The reader is referred to an article on this animal by G. D. Hornblower in *Jour. Eg. Arch.*, October, 1927, pp. 222–5.

animal may have been sacred, as in ancient Egypt. It should be noted also that it occurs on the early seals of Babylonia and Elam.

Rhinoceros. The rhinoceros is usually roughly made and in every case is a child's handiwork. That this animal was well known is proved from the frequency with which it is represented, and it was, therefore, likely to have been found in the close vicinity of Mohenjo-daro, if not in other parts of ancient Sind and the Panjāb. In some of the models of this animal the wrinkled hide is realistically portrayed by hatching or by pitting. In some cases strips of clay were even placed around the withers and hindquarters of the animal to simulate the folds in its hide. The rhinoceros also appears on the seals (Nos. 341–7), where it is shown standing over a manger-like object. This suggests that the animal was kept in confinement and, if so, it must have been captured young. According to Lydekker,[1] it stands captivity well.[2]

Dog. As would be expected, the dog is common, but all the figures but one are roughly modelled and evidently made by children. That this animal was a pet as well as a guard is proved by some of the figures being provided with collars. We have found a very mutilated figure of a dog with a collar, fastened by a cord to a post, which suggests that house animals were sometimes too fierce to be allowed at large.

Mastiff. The one well-made exception is seen in Pl. XCVI, 17. The animal, which is cut from a piece of steatite, is unmistakable, and almost exactly resembles the English mastiff of to-day, whose place of origin is at present unknown.[3] A very similar type of dog is used at the present day in Sind for worrying boar, the unfortunate quarry being tied to a post and bitten to death by three or four dogs. This is a very ancient practice ; it seems to have been known in Elam also, but in that country the boar does not seem to have been tied up.[4]

Elephant. Only two model elephants have been found, though the animal appears comparatively frequently on the seals (Nos. 362–76). And these two, both of which came from the DK Area, are in very poor condition. In Pl. XCVI, 10, however, the animal is unmistakable owing to its very rotund body. Unfortunately, the trunk and tusks are missing in both specimens.

Pig. The pig is but seldom represented, although there is no doubt that it was common in the marshes of the Indus Valley. Only two examples have been found (Pl. XCVI, 21 and 22).

Crocodile. The gharial or fish-eating crocodile, which is still common in the Indus and other rivers of India, is represented by two examples, both made of shell, one of which is illustrated (Pl. XCVI, 14). This reptile also appears on the seals and seal impressions of both Harappā and Mohenjo-daro (Pl. CXVI, 14 and 20).

Animal not identified. The animal seen in Pl. XCVI, 23, has not been satisfactorily identified. It once had two horns, but both these are now missing, though the marks of the breaks are quite distinct. The elongated muzzle and the mane-like ridge of what seems to have been bristly hair on the neck is unlike any of the bovines. In some ways this figure resembles the rhinoceros, but there is not and never has been a horn on the muzzle. It can be best compared with the one-horned animal of the seals ; and if it be the same, we have proof in this object that the so-called unicorn of the seals had two horns in reality, one being concealed behind the other.[5] Despite the rough workmanship of this figure, it was certainly not made by a child. The careful treatment of the eyes shows that it was made by one used to the modelling of such figures.

Though the tiger is portrayed on several of the seals (Nos. 350–5), we do not find it amongst the pottery figures, unless perhaps Pl. XCVI, 5 and 6, represent this animal. Both

[1] Lydekker, *Game Animals of India*, p. 31. [2] See p. 70.—[Ed.]

[3] A similar mastiff-like breed appears in both Babylonian and Assyrian art.—[Ed.]

[4] *Mém. Dél. en Perse*, t. xvi, pl. xvi, fig. 245. [5] Cf., however, p. 68.—[Ed.]

these pottery heads are moulded and are hollow at the back ; it would seem that they were once fastened to bodies made of some other material.

Hare. Of the smaller quadrupeds we have only the hare (Pl. XCVI, 9). This animal appears also on the copper tablets (Pl. CXVII, 5 and 6), but not on the seals. Pl. XCVI, 8, with its long bushy tail, perhaps represents a mongoose.[1] Of the squirrel we have several models, all in faience, e.g., Pl. XCVI, 7. They were presumably worn as amulets on necklaces, for they all have a hole for a cord.

Monkey. The monkey is now extinct in Sind, but that it existed there in ancient times is suggested by the fact that models of it are found at Mohenjo-daro made in faience, pottery, and steatite. It is always represented in a squatting position with a hand on each knee (Pl. XCVI. 11 and 13).

Turtle. We have only one model turtle (Pl. XCVI, 15), which is made of shell. It was found deep down on the Stūpa site.

Birds. A large number of model birds have come to light, but it is well-nigh impossible to identify their species. The pottery whistles may represent doves, and in Pl. XCVI, 4, we have a bird with a very long, broad tail, which may possibly be a peacock. We are on surer ground in identifying Pl. XCVI, 2, as the head of a parrot, but owing to part of the figure being missing we do not know whether this was a toy or an amulet.

Mode of manufacture. Unlike the human figures, many of the larger-made animals are hollow inside. Some of them must have been made on a core, but of what material the core was, it is as yet impossible to say, for the inner surfaces of the broken figures are uniformly smooth, though uneven. The core was clearly combustible, since it leaves no trace behind. There are always vent-holes in the unbroken figures, evidently made to permit of the escape of the gases formed in burning the material of the core. Other figurines were made in a mould. It is easier to press a thin sheet than a thick mass of clay into the crevices of a mould. With the exception of the mask-like faces and the fine bull in Pl. XCVII, 23, which were certainly all made in a mould, the pottery figures of both humans and animals were entirely modelled by hand. The hollowness of the larger figures suggests that they were made as toys for children rather than as votive offerings or as emblems of the gods. In a figure to be worshipped, that has not to be moulded, weight, unless the figure is exceptionally large, is not material ; in fact, it is an advantage rather than otherwise.

Representation of eye. The way the eye is represented in some of these pottery animals is very realistic. In Pl. XCVII, 23, a deep incision was made in the clay to represent the eye, and into it a small round pellet of clay was inserted to represent the pupil. On the side shown in the illustration, the pellet is missing. The same technique was employed in No. 16 in the same plate and in Pl. XCVI, 22 and 23. In the less carefully made figures, the eye is shown by a simple round pellet of clay, which was incised or not, according to the whim of the modeller. It should be noted here that in most of the animals the eyes are round, whereas in the human figures they are almost invariably oval in shape.

Wrinkles and markings. In the more elaborate models the details were added in various ways. Wrinkles in the skin are portrayed by means of incised lines, and heavy folds by the addition of strips of clay. The model animals are commonly painted and there is one spirited figure of a small dog covered with red spots and lines which recalls the modern Dalmatian or carriage dog (Pl. XCVI, 20).

Practically all the pottery models were made of a clay that burned to a light-red colour, and only the better specimens were improved with a slip which was either cream-coloured or washed over with a dark-red paint.

[1] Cf. the stone animal figured in Pl. CXXX, 24.

Bases. In very rare cases the model animals stand on flat, pottery bases, but, as these are always very badly broken, we have been unable to illustrate any except No. 18 in Pl. XCVI. These stands being made of thin sheets of clay were in consequence very fragile.

Faience figures. The faience figures, as would be expected, were all made in a mould, and the white or grey paste was mostly held together by the glaze that covered it. In some cases these faience models were slightly overfired, with the result that they were strengthened by the glaze penetrating deep into the paste. At the same time, however, the surface was rendered somewhat dull.

Unidentified material. The material of which the monkey seen in Pl. XCVI, 13, was made, has not yet been satisfactorily determined. It is some kind of faience, now a greyish-green in colour, but the technique is quite different from that of the rest of the faience figures ; indeed, the surface and general appearance resemble those of porcelain. It seems probable that a certain amount of glaze was mixed with the paste of which this figure was made, and that it was so highly fired as to be almost vitrified. Unfortunately, it is impossible to examine this figure properly without damaging it.

Inlaid eyes. There are indications that some of the model animals had inlaid eyes (Pl. XCVI, 11, 12, and 13). If this was so, these figures would be comparable with early Babylonian models in which inlaid eyes were common, lapis-lazuli being the material most generally used.

Detailed descriptions. The following is a more detailed description of the individual figures :—

Dove. *Pl. XCVI.*—No. 1 (HR 1935), which is covered with a red wash, is 2·6 inches high. It probably represents a dove, as the tail is fan-shaped. Though the figure is too good to have been made by a child, it stands upon a somewhat unsatisfactory base, which is slightly hollowed beneath. Level, 13 feet below surface.[1] Space between Houses III and VI, Block 3, HR Area.

Parrot. No. 2 (HR 2014), which is now 0·9 in. long, is made of a hard, vitreous paste, apple-green in colour, that looks like an opaque glass, and, like glass, contains air bubbles. The body is missing below the breast, but the head is clearly that of a parrot. Level, 5 feet below surface. Room 6, House II, Block 2 of HR Area.

No. 3 (HR 0100) is 1·5 inches high. This figure, which is made of pottery, has a dog's head and the tail of a bird, and wears a collar. Brought into camp by a small boy who said he had picked it up on the surface of the ground.

Peacock (?). No. 4 (HR 5051) is a model in pottery, 4·2 inches long, of a bird with long and wide-spreading tail and eyes represented by oval pellets. It is made of a light-red clay, and probably was intended to represent a peacock. Level, 4 feet below surface. Room 84, House V, Block 1, HR Area.

Masks. No. 5 (DK 2380) is a hollow mask, 2·1 inches high, of a panther-like animal.[2] Made of clay, in a mould. The eyes are perforated and perhaps were once inlaid. Two holes between the ears were probably used for securing the head to something. Level, 3 feet below surface. Chamber 15, House IV, Block 2, Section B, DK Area.

No. 6 (DK 2380*b*) is a similar pottery mask, 2·55 inches high, also with a hollow back and made in a mould. The eyes are so deeply hollowed out as to be almost perforated. There are traces of white paint here and there on the mask. Level, 3 feet below surface. Chamber 2, Block 1, Section B, DK Area.

[1] Cf. this bird with similar birds of Neolithic date found by Sir Arthur Evans in Crete. *Palace of Minos*, i, p. 44. Cf Peake and Fleure, *Peasants and Potters*, p. 109, fig. 50.

[2] The panther (*F pardus*) is still known in Sind, where it was once very common.

No. 7 (HR 2554) is a charming little faience figure, 1·1 inches high, of a squirrel seated on its haunches with its forepaws to its mouth, as if eating. An aperture between the forepaws and the throat allowed of the figure being suspended from a cord. Three violet-coloured lines down the back represent the three dark stripes sometimes seen on this species of animal. The glaze has lost its polish and is now apple-green in colour. Recovered from Room 21, House IX, Block 3, of the HR Area, at a depth of 4 ft. 6 in. below the surface. Very similar figures (VS 2869 and VS 2994) were found in Room 54, House XII, VS Area. **Squirrel.**

The figure appears to be the true squirrel ; though striped along the back, it should not be confused with the palm rat (*Sciurus palmarum*) that is so common in Sind at the present day. The carriage of the tail and the long tufted ears of this little figure are distinctive of the squirrel, of which some varieties are known in India with stripes along the back. Dr. Baini Prashad, of the Zoological Survey of India, has examined these little faience figures and he agrees that they represent the true squirrel, though he finds it impossible to say whether *Funambulus palmarum* or some other species. The true squirrel, *Funambulus pennanti argentescens* Wroughton, he says, "was separated by Wroughton in 1905 from *Sciurus palmarum* Linn., with which it had been confused by earlier workers.[1] *Funambulus palmarum* has been found in Rāwalpindi, Bhuj, Cutch, and Peshīn, Persian Balūchistān. The specimens from Balūchistān show three well-marked, whitish-isabelline or pale-rufescent, longitudinal stripes from the back of the neck to the rump. Most of the other varieties of *Funambulus pennanti* and other species of the genus *Funambulus* which are found throughout central and southern India also show the same type of stripes."[2] **Not palm-rat.**

No. 8 (B 396) is a pottery model, 2·9 inches long, of an animal with a long bushy tail, which may be either a squirrel or a mongoose. The nostrils are indicated by small holes and the eyes by pellets of clay, in each of which an incision represents the pupil. Level, 8 feet below surface. Section B, DK Area. **Mongoose.**

No. 9 (B 218), which is hollow and 2·45 inches long, is a pottery model of a hare ; but the modeller entirely forgot that hares do not possess long tails. Level, 9 feet below surface. Section B, DK Area. **Hare.**

No. 10 (C 676) is a hollow figure, in light-red clay and 2·75 inches high, of an elephant, but the trunk and tusks are unfortunately missing. Despite the small square hole underneath the body, this figure may once have been a rattle. Level, 7 feet below surface. Block 12, Section C, DK Area. **Elephant.**

No. 11 (HR 4415), which is a very roughly modelled pottery figure, 2·2 inches high, represents a seated monkey with hands on knees. This model is of especial interest because the long hair is represented by carefully incised lines. Level, 3 feet below surface. Room 26, House XXVI, Block 5, HR Area. **Monkeys.**

No. 12 (L 1033) is very broken and weathered, and now stands only 1·5 inches high. It seems to be made of calcite and is a well-moulded little figure, with hollowed eyes elaborated with fine incised lines. It probably represents a monkey. It comes from Court 73, Block 3, Section D, of the L Area, and can be dated to the Late Period.

No. 13 (DK 2091), which is 1·5 inches high, is a delightful little figure of a monkey squatting with hands on knees.[3] As the eye-sockets are so very deep, there is a possibility

[1] As the difference between these species was not detected until 1905, we may be sure that it was unknown to the Indus people.—[Ed.]

[2] Personal communication.

[3] This position is also very usual in the monkey figures of Elam. For instance, *Mém. Dél. en Perse*, t. xiii, pl. xxxix, figs. 5 and 7.

that they were once inlaid. It was found in one of the trial trenches in DK Area and belongs to the Late Period. Chamber 1, Block 2, Section B, DK Area.

Gharial. No. 14 (HR 1924) is the head of a gharial, 2·15 inches long. A slight projection at the back of the head suggests that it once served as a handle. It is roughly carved in shell, and the teeth are indicated by crudely cut, incised lines. Level, 13 feet below the surface. Space between Houses III and VI, Block 3, HR Area.

Turtle. No. 15 (DM 95), which is also made of shell and 1·6 inches long, is a roughly carved model of a turtle. Level, 4 ft. 6 in. below surface. Stūpa Section, SD Area.

Dogs. No. 16 (HR 5336) is a figure of a dog with its tongue hanging out, a detail seldom shown in a pottery model. The figure is 4·6 inches long and made of light-red clay without a slip. The eyes are represented by round pellets of clay. Level, 5 feet below surface. Room 37, House XXIX, Block 5, HR Area.

No. 17 (L 590) is 1·2 inches long. It is a beautifully carved model in steatite, of a mastiff, as shown by the short ears and fold between the eyes. The latter seem to have been once inlaid. It was found in Region 128 of the L Area, 3 feet below the top of the eastern wall.

No. 18 (HR 2680) is a very roughly made pottery model covered with a red wash. It is 3·3 inches long and represents a dog tied to a post by a broad band passed round its neck. A pellet of clay represents the buckle or other fastening of the band. Level, 3 ft. 6 in. below surface. Courtyard 14, House I, Block 1, Section A, HR Area.

No. 19 (HR 1854) is a seated dog, 2·05 inches high. It is made of light-red ware covered with red paint, and a hole in the base of the figure probably served to attach it to a stick. Level, 12 feet below surface. From space between Houses III and VI, Section A, HR Area.

No. 20 (HR 6024) is 3·1 inches long and evidently the model of a dog. It is made of light-red ware and is striped with alternate longitudinal lines and rows of spots in red. The legs and face are ornamented only with stripes. This is a remarkably alert-looking animal. Found at a depth of 9 feet in Room 85, House IX, Block 2, HR Area.

Pigs. No. 21 (DK 2153) is a hollow pottery model, 3·7 inches long, of a pig's head which is complete in itself and never had a body. The model is washed over with red and has a hole in the base for the insertion of a stick. Level, 2 feet below surface. Chamber 9, Block 16, Section C, DK Area.

No. 22 (L 600), which is 4·5 inches long, is a pottery model of a pig, carefully made by hand, and showing the bristles on the head and along the back. The tushes just protrude from the mouth, and incised lines indicate the wrinkles in the hide. The pig was probably domesticated by the inhabitants of Mohenjo-daro as well as being found wild in the marshes of the Indus Valley. The specimen portrayed by the model was probably of the domesticated variety, as its hindquarters slope but little.[1] This figure was found in Chamber 103 of the L Area, just below an upper pavement ; it can, therefore, be dated to the Late Period.

No. 23 (VS 45) is 4·35 inches long and made of pottery. It represents an animal with a long muzzle and short mane. There are traces of two horns on the top of the head, but in other respects it resembles the unicorn-like animal on the seals. Level, surface of the ground.

Ram. No. 24 (SD 650) is 4·3 inches long and made of badly baked pottery. The figure once possessed horns and there is every probability that the child that made it attempted, somewhat unsuccessfully, to make a figure of a ram. A number of lines have been carefully

[1] On the other hand, the prominent ridge along the back suggests a wild variety, probably *S. cristatus*. See Newberry's article in *Journ. Eg. Arch.*, November, 1928, pp. 211–21

incised on the neck to represent hairs, and the eyes are oval in shape. It is quite possible that the face was intended to be human. If so, the tuft at the chin would represent a beard. The mouth is represented by a strip of clay with an incised line, a very uncommon feature in animal figures, but frequent in human figurines. This type of animal is a common one at Mohenjo-daro. Found at a level of 3 feet below the surface of the ground, in the middle of the street that separates the buildings south of the Great Bath and the Southern Buildings section.

No. 25 (VS 191) is so roughly modelled that it is difficult to say what it represents, though it was possibly meant for a bull. It is 5·5 inches long and made of pottery. Level, 3·5 feet below surface. **Bull.**

Pl. XCVII.—No. 1 (HR 2013) is a faience figure of a ram couchant, 0·8 in. long. The glaze is badly scaled through salt, but still shows traces of a light-green colour. Level, 2 feet below surface. Room 12, House VIII, Block 3, HR Area. **Rams.**

No. 2 (SD 2278), which is 1·45 inches long, is a model ram in a couchant position cut in steatite. It is an exceedingly good piece of work, details such as the fleece being exceptionally well treated and the horns especially so. Most of the original glaze has scaled off through the action of salt. The colour seems to have been green, due to an iron salt, as the figure is now of a reddish colour. Found at a depth of 3 feet below the surface of the ground, in the buildings (Block 4, No. 4) south of the Great Bath.

No. 3 (VS 2046) is also a faience model of a ram, 1·7 inches long. It was made in a mould and the features were touched up afterwards. The fleece is indicated by incised lines. The very porous, white paste still shows traces of a glaze which is now green in colour. Level, 3 feet below surface. House XXIV, Block 4, VS Area.

No. 4 (VS 2667) is part of the head of a sheep made in straw-coloured ware. The corrugations of the horns are shown by hatching. Level, 4 ft. 5 in. below surface. Room 7, House XXXIII, Block 7, VS Area.

No. 5 (SD 2278) is a plaster cast of No. 2 which accentuates its very fine modelling.

No. 6 (VS 2215) is a faience figure, 1·55 inches long. At first sight it appears to be a model of a dog, but a closer inspection shows that it is a ram with curling horns. The eyes appear formerly to have been inlaid. There is a large hole, 0·2 in. in diameter, in the base of this figure for the insertion of a stick, or it may have been supported on a metal rod for glazing. Level, 4 feet below surface of ground. Southern end of House XVI, Block 2, VS Area.

No. 7 (E 634) is a hollow clay model of a ram, which has unfortunately lost its legs. The fleece is indicated by wedge-shaped impressions made before the model was baked. Level, 6 feet below surface. Trench E, DK Area.

No. 8 (B 236), which is 4 inches long, is a pottery figure of a rhinoceros. The eyes are represented by incised pellets of clay, and the folds of the skin on the shoulders and hind-quarters by strips of clay pricked to give the characteristic warty look. Level, 4 feet below surface. Street between Blocks 2 and 3, Section B, DK Area. **Rhinoceros.**

No. 9 (HR 69) is also a pottery model of a rhinoceros with the wrinkled, warty skin represented by strips of clay with rough incisions pricked upon them. It is 3·1 inches high, and its legs rather long in proportion. Level, surface of ground.

No. 10 (L 1108), which is 4·25 inches long, is another pottery model of a rhinoceros, with the prominent ridge along the back indicated by a strip of clay, and the same pricked bands to represent the warty folds of skin. It comes from the room marked 114, Block 6, in the L Area and belongs to the Late Period.

No. 11 (VS 1284) is 4·2 inches long and also represents a rhinoceros. The warty

folds of skin on the shoulders are again indicated by pricked strips of clay. Level, 5 feet below surface. House XVIII, Block 4, VS Area.

No. 12 (DM 188), which is 1·65 inches long, is a pottery figure of a humped bull. It is rather better made than is usual with the smaller figures. Level, 3 ft. 6 in. below surface. Stūpa Section, SD Area.

Nos. 13 and 18 (HR 36) is a model of a bull of the bison type with very hairy hump, shoulders, and dewlap, the hairs being represented by rough incisions. It is 2·9 inches long and made of pottery. Level, just below the surface of the ground.

Humped bull. No. 14 (L 918), which is 4·1 inches long, represents a humped bull with garlands around its neck. The hump is indicated by an added piece of clay with lines scratched upon it to represent hair. The eyes are represented by pellets of clay, each with a large incision in the centre to simulate the pupil. This figure was recovered from Court 69 and belongs to the Late Period. A second view of this animal is numbered 21 in the same plate.

No. 15 (HR 5585) is 3·1 inches long. It represents some animal, possibly a sow, with a mane and elongated snout-like muzzle. It has unusually large eyes, small ears, but no signs of horns, and a small tail. Level, 5 feet below surface. Room 20, House LIX, Block 8, HR Area.

Short-horned bulls. No. 16 (DMK 24) is a roughly made pottery figure of a bull with its head lowered as if about to charge. It is 1·6 inches long and has been coated with a cream slip. Level, 7 feet below surface. Stūpa Section, SD Area.

No. 17 (L 350) is badly broken and now 2 inches long. It is a pottery model of a short-horned bull or perhaps a bison, and like No. 16 has its head lowered. The wrinkles in its hide are indicated by incised lines. Found in the open space No. 91 in the L Area and dated to the Late Period.

No. 18 (HR 36) is the same figure as No. 13, but photographed in a different position.

No. 19 (VS 1564) is 3·1 inches long and made of pottery. That this spirited-looking animal is a bull and not a dog is evident from its horns, which are decorated with obliquely incised lines. It is well made, though apparently the work of a child. Level, 4 feet below surface. House XXV, Block 7, VS Area.

No. 20 (L 327), whether a pottery model of a dog or bull, it is hard to say. It is 3·5 inches long. The nostrils are indicated by holes, and eyes by the usual pellets of clay. Late Period. Chamber 96 of the L Area. No. 21 (L 918) is another view of the bull illustrated under No. 14.

No. 22 (SD 2184), which is 4·05 inches long, is a pottery model of a bull with short horns. It has a collar of cloth or some other material wound around the neck. Found in Passage 3 of the Great Bath building, at a level of 10 feet below the surface. It is of Intermediate date.

Garlanded bulls. No. 23 (VS 1539) is a hollow pottery figure, 6·2 inches long, made of a light-red clay coated with a smooth, cream slip. It may be a rattle, as there is a pellet inside, but the noise is not very great. This model was made in a mould and details were added afterwards by the modeller. A very powerful short-horned bull is represented, the heavy wrinkles around the strong neck and the folds of skin beneath the throat being faithfully copied. There is a garland or ornamental collar around the neck, which suggests that this figure served some religious purpose. It was found in House 27 of the VS Area, at a level of 10 feet below the surface of the ground, and belongs to the Intermediate Period.

No. 24 (DM 108) is a very well-modelled pottery figure, 3·25 inches long, of a bull with the wrinkles around the neck portrayed by incised lines. The animal wears a garland around its neck with what seems to be a bell. Level, 8 feet below surface. Stūpa Section, SD Area.

No. 25 (DM 115) is a pottery figure, 1·9 inches long, of a bull. Level, 9 feet below surface. Stūpa Section, SD Area.

No. 26 (SD 2600) is a similar model, 2·6 inches long, with the hair represented by incised lines. This bull was found at a level of 3 feet below the surface in buildings (Block 4, No. 4) south of the Great Bath.

Reverence paid to bull. Both varieties of bulls are sometimes represented upon the seals as garlanded; and the pottery models, as will have been seen, are sometimes similarly decorated (Seals 337 and 340, Pl. XCVII, 23).

Sacred animals. The other animals, the buffalo, rhinoceros, tiger, elephant, etc., may perhaps also be regarded as sacred in view of their representation on the seals. Though they are never adorned with trappings or garlands, the same manger-like object, which it is perhaps justifiable to regard as a cult object, is shown in front of most of them on the seals. Possibly the small numbers of these animals as compared with representations of the bull indicates that they were associated with lesser deities.

It does not necessarily follow that all these animals were emblems or representations of particular gods, though the probability is that they were. Many other things, such as trees and plants, were doubtless objects of actual worship.[1]

With regard to the ram we are on more definite ground. Though clay figures of this animal are very rare, it frequently, as we have seen, occurs in glaze (Pl. XCVII), but always very small. It does not appear on the seals. Three composite animals in which the ram is conspicuous (Pl. C, 7–9) must be cult objects from their size. They show the animal in a couchant position. One of these figures has an elephant's trunk, but the front of the head is missing and we are left to wonder if it was in human form.

In our present state of knowledge, it is perhaps unsafe to regard the few pottery male figures that have been found as representations of the consort of the female goddess; but that she had a consort or consorts is more than probable, and this would bring her into line with the similar goddess of the ancient Sumerians, who was also commonly represented in clay. There, however, the drawing of parallels must cease, for the conceptions of the two deities in the two countries may have been entirely different.

Cow not represented at Mohenjo-daro. In Mesopotamia the symbol of the Mother-Goddess, the "Fruitful One", the "Lady of the Gods", etc., was the cow. But, as far as we can tell, this particular animal was not regarded as sacred either at Harappā or Mohenjo-daro. Though it must be confessed that the sex of the many pottery figures of cattle is doubtful owing to their very rough workmanship, the better finished figures on the seals and copper tablets are definitely of the male sex; and this is also true of the other animals, the buffalo, the so-called unicorn, and the goat. The cow, even if it was regarded as sacred, was for some reason, at present unexplained, not represented in plastic form or carved in stone. From the set of their horns also most of the pottery figures of cattle appear to be bulls rather than cows. The sexual organs are only shown in the better finished specimens and are invariably male.

[1] For instance, the pipal tree.

Chapter XIX

STATUARY

Statuary rare.

ALTOGETHER nine pieces of statuary have been found up to the time of writing at Mohenjo-daro, three of which are representations of animals in stone. Of human figures, four heads, more or less damaged, have been unearthed, but to the present no traces of the bodies, though it is hoped that these may come to light after further excavation. Only one complete figure has been found, which unfortunately is so badly weathered that it is difficult to say with absolute certainty whether it represents a human being or not. Another figure which lacks the head is more or less complete and in a fair state of preservation.

The fragment of a statue shown in the lower portion of Pl. C, 8, bears a very close resemblance in the shape of the fingers and the manner in which they are set to the figure above it on the same plate (Nos. 4–6); it probably came from a similar statue.

Composite animal.

Of the three animal figures that have been found, the best preserved is shown in the right-hand corner of Pl. C. This animal is clearly composite in form, whereas the other one that is illustrated in the same plate is a simple representation of a ram.[1] The third example is too badly damaged to be photographed.

Before generalizing on this statuary, it will be well to describe the individual pieces in detail.

Human Figures

Male statue.

Pl. XCVIII, 1–4 (DK 1909). Material, steatite. Found in Chamber 1, Block 2, Section B, of the DK Area at a level of 4 ft. 6 in. below the surface of the ground. Probably of the Late Period.

Portrait figure.

This is by far the finest piece of statuary that has been found at Mohenjo-daro. It looks like an attempt at portraiture, and represents the head and shoulders of a male figure. The lower portion is missing and also a part of the back of the head. It is now 7 inches high.

Shawl.

The figure is draped in an elaborate shawl with corded or rolled-over edge, worn over the left shoulder and under the right arm. This shawl is decorated all over with a design of trefoils in relief interspersed occasionally with small circles, the interiors of which are filled in with a red pigment.[2]

[1] The point is questionable. The figure, which is much damaged, may be a composite animal.—[Ed.]

[2] Exactly the same trefoil pattern frequently decorates the bodies of Sumerian bulls of an early date. See *Antiquaries' Journal*, vol. iii (1923), pl. xxxiv. Also the stone figure of a bull published by S. Smith in *Illustrated London News*, 13th November, 1926.

Mr. Gadd informs me that he is of the opinion that these two bulls are representations of the "Bull of Heaven"

Features. The figure wears a short beard and whiskers, and a closely cut moustache. The eyes are long and half closed, but they are set straight and are not at all Mongolian in type.[1] The shell inlay of one eye is still in place. The nose is well formed and of medium size; it springs straight from the exceptionally low and receding forehead. The mouth is of average size with remarkably full and fleshy lips, and the curiously shaped ears resemble double shells, with a deep hole in the middle.[2]

Hair. The hair is parted in the middle and brushed over the back of the head, where it ends in short locks. Around the head is a plain fillet of some woven material, which is fastened at the back in a knot, whose loose ends hang down behind. This fillet is ornamented with a circular buckle placed in the middle of the forehead.

Jewellery. A plain armlet worn on the upper portion of the right arm is provided with a buckle similar to that worn on the forehead.

Two holes drilled on either side of the neck just below the ears probably once served to secure an ornamental necklace of precious metal. This is a point of considerable significance, for the addition of ornaments to a statue suggests that it was a cult object. If we are right in this conjecture, the head before us may represent either a deity or a personage who was deified. But, unfortunately, the chamber in which the head was found, though of most peculiar construction, cannot be identified with any certainty as part of a temple. There is, however, the possibility that the statue was not found where it was originally kept.

There is a break at the back of the head of this statue, with a perfectly plain surface. It is possible that the head was accidentally broken and the fracture trimmed down in order that another piece might be cemented to it.

Trefoil pattern. The interiors of the roundels and trefoils on the robe have been left slightly roughened, in order that the red paste used for filling them might adhere more firmly to the stone. The trefoil pattern and also the roundels appear to have been first shaped by means of a drill, for there is a shallow pitting in the middle of each foil and roundel suggesting the point of a drill; the pittings are much too central as well as too shallow to have served merely for keying purposes.

Finish. The general finish of this head is exceptionally good. Its surface is smooth and in some places almost polished. When it was taken from the earth it had a fine smooth coating over most parts of it, similar to that observed on some of the seals.[3] This coating unfortunately disappeared on soaking the object to rid it of its salt.[4]

Female head. Pl. XCIX, 1–3 (L 127). Found just below the first pavement of Chamber 100 in L Area. Late Period.

(a Babylonian name for one of the constellations) and therefore the trefoils represent stars. If this be so, the fact that the same design appears on the cloak of the figure being described may point to its being a deity.

The comparatively close proximity of a people like the Sumerians, who paid such devoted attention to the stars, may well have influenced the religion of the Indus Valley peoples.

The same trefoil pattern occurs on the royal couch of Tutankh-Amen and on the Hathor cow. See also the beads in Pl. CXLVI, 49 and 53.

[1] Rai Bahadur Ramaprasad Chanda has pointed out that the half-closed eyes concentrated on the tip of the nose proclaim this figure to be a yogī. His view receives strong confirmation from the subsequent discovery of the seal figured in Pl. XII, 17, which depicts Śiva in the posture of a yogī. See above, p. 54.—[Ed.]

[2] Note the resemblance of these ears to the pieces of shell inlay in Pl. CLV, 38–44, and especially to Nos. 45–7.

[3] For a description of this coating, see Chapter XXI on the seals.

[4] For further remarks on this sculpture see p. 44 *supra*.

Inlaid eyes.

This is the badly weathered head of a statue in grey limestone, now 5·7 inches high. It apparently represents a female, for there is no beard, and the hair, which is slightly curly, hangs down the back of the head. The eyes beneath the receding brows are long and narrow and the original inlay of the right eye, which is made of a whiter stone than the head, is still in place.

Features.

The nose, unfortunately, is missing and the mouth too weathered for us to discern its original shape. That there was once a necklace is suggested by the presence of two holes on each side of the neck, just in front of the hair. The ears are very primitive and a deep ear-hole is drilled in each.[1] It is unfortunate that this head is in such a bad state of preservation.

Yellow limestone head.

Pl. XCIX, 7–9 (L 898). Found 2 feet below the surface of the ground in Chamber 77 of L Area.[2] It belongs to the Late Period. Material, yellow limestone.

Hair gathered in knot.

This head, which is 7·75 inches high, may represent either a male or a female, as there is no beard; but the hair is gathered up in a knot at the back of the head in a similar way to the obviously male figure shown in illustration No. 6. This may have been the customary fashion of hair-dressing for men—a fashion which still survives in many parts of India at the present day. A cord or fillet worn round the head serves to keep the knot of hair at the back of the head in place.

The arrangement of the hair-knot is curious. Two oblique depressions, which run from right to left across its upper portion, apparently mark off three separate twists of hair. A number of vertical lines on the lower portion of the knot suggest strands of hair lying close together.

Features.

The mouth is small with full fleshy lips, and the chin is prominent. A curious projection just below the chin may be a rough attempt at a beard.[3] The eyes which, like the other features are much worn away, are now mere slits. They were formerly inlaid with what would seem to have been a plastic material, for holes for keying have been drilled in their sockets. On the other hand, these holes may have served to hold the cement of an inlaid eye of stone or shell. The nose is small and two round drill-holes roughly represent the nostrils. A remarkable feature of this head is the small size of the cranium compared with the broad, heavy face.

Male statue.

Pl. C, 1–3 (L 950). Found above pavement in N.E. corner of Chamber 75 in L Area.[4] Late Period. Material, veined grey alabaster. The figure, which is 11·5 inches high, is obviously that of a male and is dressed in a thin kilt-like garment fastened round the waist.[5] Another garment or shawl of thin material is worn over the left shoulder and under the right arm, and appears to hang down over the kilt. The left knee of the figure is raised, but there is nothing to indicate the position of the right foot beneath it. The sculptor, and not subsequent weathering, is responsible for this lack of detail. The left arm is carried around the side of the left knee, so that the hand clasps the front of the knee. This hand is only roughly indicated, and the sculptor evidently was not clear how it should be arranged. Indeed, it is difficult to believe that the same man carved

Dress and position.

[1] These holes, which are found in all these heads, seem intended for the attachment of some ornament in the middle of the ear and perhaps explain why the ears themselves are left without structural definition. See *supra*, p. 44.—[Ed.]

[2] Its datum level is minus 2·3 feet.

[3] Or Adam's apple.

[4] Its level was 2·5 feet below datum.

[5] It is not clear how Mr. Mackay infers the existence of this kilt beneath the outer garment.—[Ed.]

both the arms and hands, for the right arm, though of rough workmanship, shows some power of modelling, whereas the left arm and hand are positively shapeless.[1]

Hair. A squarish projection at the back of the head is evidently intended to represent a knot of hair. It is, however, unfinished and shows the chisel marks of the preliminary dressing. There is somewhat more finish about what may be a rope of hair hanging down the back.

Modelling. The modelling of this figure is poor. An attempt has been made to represent the muscles of the right arm, though with scant success. But even so, the very fact that the sculptor endeavoured to show the muscles and freed the arm from the body shows that sculpture at Mohenjo-daro was by no means in its infancy. Perhaps we may ascribe this particular piece to an artist of inferior skill. The finish of the statue is smooth, but the original polish, if it ever existed, has been removed by weathering.[2]

Male head. Pl. XCIX, 4–6 (HR 910). Found in Chamber 14 of House I, Section A, HR Area, at a depth of 6 ft. 7 in. below the surface of the ground. Late Period.

Eyes and features. In this head, which is 6·9 inches high, the eyes are almond-shaped and slightly wider than those of the other figures described. They were once inlaid and the edges of the eye-sockets are slightly raised to enhance the effect.[3] The nose is fairly large and the nostrils indicated by two shallow holes. The mouth is of medium size with a thin upper lip and somewhat fleshy lower one. The ears are quaintly saucer-shaped with a small central ear-hole.

Hair-pin. A closely cropped beard joins whiskers which are carried well up beyond the top of the ear. The hair is waved, as indicated by incised lines placed chevron-wise, and gathered behind in a knot worn on the lower part of the back of the head, which is long and narrow. This knot is held in place by a string-like fillet worn round the forehead, which is of greater expanse than in the other heads. On the left-hand side of the lower part of the knot a hair-pin with a small round head and a straight stem is represented.

Finish. The head is made of limestone and shows no trace of either polish or colour The cheek bones are very prominent, wide apart, and of medium height, and the deep-set orbits are a noteworthy feature. It looks as if some attempt at portraiture had been made in this head and the careful finish of the hair is very striking.

Male figure. Pl. C, 4–6 (HR 163). The body of this figure was found on top of the wall above the western flight of steps in Courtyard 10 of House I, HR Area, but a part of the head was discovered by Mr. Hargreaves 45 feet to the north in South Lane of the HR Area. A little later another part of the head was unearthed some 8 feet further to the N.W., in Courtyard 34, House I. Probably Late Period.

Unusual position. Owing to the exposure to which it had been subjected, this alabaster statue, which measures 16·5 inches high, is so much weathered that the features have been almost entirely obliterated. The figure is in a curious half-kneeling position, with the right knee raised. The hands rest on the knees, between which a fold of a skirt-like garment is stretched. The upper edge of this garment, which seems to have been run on a cord, is clearly seen at the back of the waist. What remains of the eyes shows that they were long and narrow, and set obliquely. The mouth is now very indistinct ; beneath it there is a short, cropped beard. The ears are more naturally represented than in any of the other statues. A fillet round the very

[1] It should not be forgotten that the left arm is hidden beneath the mantle or shawl, while the right arm is bare. It is not to be expected, therefore, that there should be much definition in the modelling of the left arm. Probably the mantle itself was painted, and this would have made a great difference to the apparent uncouthness of the lower part of the figure. For a different appreciation of the modelling, see p. 44.—[Ed.]

[2] It is to be noted that the white lines seen in the photographs are veins in the stone.

[3] Noticeable also in the head in Pl. XCVIII.

low forehead is tied in a knot at the back of the head with the ends hanging down the back of the shoulders. The left heel can just be made out at the back of the figure. There is no doubt that this figure represents a human being. The statue, however, may have been intended to be grotesque, as the mouth appears to be open; and it is possible on this account that the figure represented some form of deity.[1]

Possibly a grotesque.

Fragment of statue.

Pl. C, 8 (SD 694). Found inside the S.E. corner of Block 1 in the Southern Buildings Section of the Stūpa Area. Level, 4 feet below surface of ground. Intermediate Period.

This is a fragment of a limestone statue, 8·3 inches long, of very poor workmanship. The very archaic way in which the fingers are represented, the thumb being nearly as long as the fingers, and the resemblance of this hand and knee to the seated figure in Pl. C, 1–3, prove that this fragment is of prehistoric date. Despite a certain amount of weathering this piece of stone still retains a little of its original polish.

Animal Figures

Statue of ram.

Pl. C, 9 (SD 1109). From the S.E. side (9) of Block 7 in the Southern Buildings Section of the SD Area. Level, 3 feet below surface.

Composite character.

This limestone figure stands 10 inches high and represents a couchant animal with ram's horns and body, and a long appendage from the head, representing the trunk of an elephant with its transverse creases. This image calls to mind the curious composite animal represented on seals Nos. 377, 378, 380, and 381, with a ram's body, a human face, elephant's trunk, etc. In the figure before us the head is badly broken, but there is no doubt about the ram's body and the elephant's trunk, though it is questionable whether it originally had a human head. The animal reclines on a plinth measuring 8 inches long by 6·2 inches wide and 4·25 inches high, which is roughly shaped with slightly rounded corners and an unequal base. The carving is poor and the finish rough.

Figure of ram.

Not illustrated (VS 116). Found in Lane 3, between Houses XIX and XXI, Block 3, VS Area. Level, 2 feet below surface. Intermediate Period.

This is a roughly carved limestone figure of an animal that appears to be a ram. It reclines on a plinth, the whole measuring 7·1 inches high and 12·5 inches long. Unfortunately, all the details of the head and fore-quarters are missing.

Statue of animal.

Pl. C, 7 (HR 1072). Room 19, House III, Block 2, Section A, HR Area. Level, 2 feet below surface.

This is a small statue of an animal reclining on a plinth, 6·4 inches long by 4 inches wide by 4·5 inches high. The head, unfortunately, is missing, but the shaggy fore-quarters of the animal suggest those of a ram. The figure,.including plinth, is 8·4 inches high. The material is limestone.

Remarks

No resemblance to foreign statuary.

Eyes.

The human statuary displays many interesting features In the first place, it is hardly comparable with that of any adjacent country. It does not resemble the Sumerian statuary of any period, the chief points of difference being the form of the eye and the arrangement of the hair. In all Sumerian statuary, whether early or late, the eye is round

[1] There are, of course, numerous examples of deities represented grotesquely. I would instance, as an example, the Egyptian god *Bes*.

and full,[1] whereas in all the statues found at Mohenjo-daro it is curiously narrow; so narrow, in fact, in some examples that it produces the effect of half-closed lids.[2] This is a feature of the Mongolian eye, but the resemblance ceases at that, for there is no trace of Mongolian obliqueness; indeed, the slope which certainly is present in some of the Mohenjo-daro heads (Pl. XCIX, 1 and 7; Pl. C, 4) is in the reverse direction.[3] Struck by this very curious feature, I made an examination of some of the Sindi workmen at Mohenjo-daro, and found that the eyes of many of them presented the half-closed appearance seen in some of the statuary, an appearance which is quite distinct from the almond-shaped eye that we find in other parts of India.[4] This is hardly to be wondered at, as there is every probability that certain elements of the old population have survived. It is, however, idle to dwell on this subject, until a proper anthropological survey has been made in Sind, a task which promises interesting results.

Neck. A noticeable feature in all the statuary is the thick short sturdy neck. This is a common feature of the early statuary of Babylonia,[5] but it seems to be especially emphasized at Mohenjo-daro and suggests that the people were actually possessed of this characteristic.

Receding forehead. Another very noticeable point is the low, receding forehead, which also seems to have been racial, for it is a conspicuous feature of every one of the heads. This, of course, does not necessarily imply lack of intellect or brain power.

Cheek-bones. Excepting the head seen in Pl. XCIX, 4, the cheek-bones of all the heads are markedly flattened. As Professor Keith has suggested, in his description of some skulls from Al 'Ubaid,[6] flattened cheeks may be an indication of an ancient civilization, for prominent bones are primitive marks.

Prognathism. Prognathism is not a noticeable feature in any of the heads. In fact, the tendency seems to be the other way; in most of the heads the chin is decidedly weak.

Inlaid eyes. In three of the heads the eyes are inlaid. In two cases this inlay was roughly cut to fit the eye-socket; in Pl. XCIX, 1, the inlay is stone and more carefully finished. In the head illustrated in Pl. XCVIII, 1–4, the shell inlay work of the eye is much more refined. There are no indications of any attempt to represent the pupil, but it is possible that this part of the eye was once painted on the inlay. The use of inlay to make the eyes and consequently the whole head more life-like was common in both Babylonia and in Egypt; in the latter country it was carried to an extraordinary degree of realism, even in early times. The same is true in a lesser degree of Sumerian statuary, where lapis-lazuli was commonly used for the pupil, and shell for the rest of the eye.

Noses. With the possible exception of the figure in Pl. XCVIII, we do not find in these heads the very prominent nose that is characteristic of early Sumerian statuary. Though, unfortunately, this feature is either partly missing or badly damaged in all our examples, enough remains to indicate that the ridge of the nose is in a line with the forehead,[7] as in Greek statuary, which is not the case in Sumerian statues.

[1] Note the eyes of a pottery figure found at Al 'Ubaid. See Hall and Woolley, *Ur Excavations*, vol. i, pl. xlviii. Is this figure indeed Sumerian?

[2] For the explanation of this, see *supra*, p. 357, note 1.—[Ed.]

[3] Langdon remarks also of the Elamites that "the axis of the eyes slope slightly downwards from the inner to the outer corner, a phenomenon noticeable in many Sumerian heads". *Cambridge Ancient History*, vol. i, pp. 362–3.

[4] Pl. CLIX, 8 of this book.

[5] Hall and Woolley, *Ur Excavations*, vol. i, p. 238. Remarks by Professor Keith on some skulls from Al 'Ubaid.

[6] *Ibid.*, vol. i, p. 235.

[7] Professor Keith observed the same feature in eight out of fifteen skulls from Al 'Ubaid. *Ibid.*, vol. i, p. 236.

Ears. In the treatment of the ear, the sculptor was not at all successful. In the head illustrated in Pl. XCVIII, the edge of the ear and its interior lobes have been portrayed in so conventional a manner that, looked at apart from the head, it would hardly be recognized as an ear at all.[1] The other heads, especially No. 2 in Pl. XCIX, have ears which, though of much inferior finish, are more lifelike. In every case the ear-hole was represented by drilling a hole in the side of the head.[2]

Modelling. Other features indicate the very primitive nature of the statuary of Mohenjo-daro, but, none the less, the art of sculpture had so far advanced as to separate some of the limbs from the body, i.e. in Pl. C, 1–3.[3] In this figure the right arm stands away from the body, and an attempt has been made with more or less success to portray the muscles. On the other hand, the arm is much too thin and out of proportion to the rest of the body, and one is left with the impression that the sculptor in seeking after realism had cut away too much of the arm and finally had to give it up as hopeless.[4] The fingers of this same statue also gave the sculptor much trouble, especially those of the left hand, which are clasped around the knee. Though recognizable as such, the thumb projects from the wrist instead of from the hand. The thumbs of the seated figure shown in Pl. C, 4 and 5, are nearly as long as the fingers ; and this is also the case in No. 8 in the same plate.

Use of razor. It is of interest to note that these figures are not clean-shaven, as are so many of the Sumerian statues. Fashion seems to have required a closely cropped beard, which in some cases was slightly curly. In those Sumerian sculptured heads which are represented with beards, the upper lip is invariably shaven ; but this does not seem to be the case with the head illustrated in Pl. XCVIII, though there is also no moustache in the head in Pl. XCIX, 4.

Long hair. Long hair was worn, at least by some of the male inhabitants of Mohenjo-daro, as in India to-day. In some cases it was neatly coiled up in a knot at the back of the head ; in others, part was knotted and part allowed to hang down. The knots of hair were secured by a fillet worn round the forehead. In Pl. XCIX, 1–3, which we may, perhaps, accept as representing a woman, the hair, which is distinctly curly, was allowed to hang down at the back of the head. Additional evidence that the hair was sometimes wavy is afforded by Nos. 4–6 in Pl. XCIX, where the curls are most carefully represented—in the last case by means of chevron lines. The beard and whiskers in this case also show a tendency to curl.

Shape of heads. Viewed from the top, the heads vary considerably in shape. Head No. 1 in Pl. XCIX and head No. 4 in Pl. C are brachycephalic, and No. 7 in Pl. XCIX, dolichocephalic. The fine head in Pl. XCVIII is between the two. From the crude workmanship of the majority of the heads it seems probable that the sculptor paid no particular attention to the shape. Three of them (Pl. XCIX, 4 and 7, and Pl. C, 4) narrow considerably towards the back ; possibly this happened quite unintentionally in the process of carving the hair, to which the sculptor devoted some pains.

Garments. In some of the statuary the upper part of the body is draped with a light shawl passed over the left shoulder and under the right arm. This shawl was sometimes ornamented, as is seen in Pl. XCVIII, where the prominence of the design suggests that the trefoils and circles were sewn or fastened on in some way instead of being woven in the material. Figure No. 1 in Pl. C would seem to be wearing a very thin shawl that hangs down over a kilt-like

[1] This is certainly not the case with the early statuary of Egypt or Sumer.

[2] See *supra*, p. 358, footnote 1.—[Ed.]

[3] Also to be observed in the archaic statuary of Sumer. In the stone figures of Egypt, the arms are never portrayed as being entirely free, for the reason that they were thereby strengthened. With most wooden figures this rule was not observed, and the arms are detached. Note the ivory image from Badari in Brunton and Caton-Thompson, *The Badarian Civilization*, pl. xxiv.

[4] For a different appreciation of this statue, see p. 44 *supra*.—[Ed.]

garment, and the same is true of Figure 4 in the same plate where, however, the cord of the kilt is more distinctly shown.[1, 2]

Ornaments. The fillet seems to have been quite a common ornament, judging from the number made of thin, sheet gold which were found in the course of our excavations. Fillets were, however, often made of some woven material, as in some of the statuary they are shown tied in knots at the back of the head, and, moreover, have ends hanging loosely over the back of the shoulders. The statuary and objects found in the pre-Sargonic graves in Sumer show us that very similar fillets, of gold or silver, and woven material, were worn in that country from very early times.[3]

Materials. All the statues were cut from comparatively soft stones, grey and yellow limestone, alabaster, and, in one case, steatite.

It is a moot point, at present, whether their faces were painted to make them look more lifelike. On their smooth surfaces the colours, if they ever existed, may have disappeared long ago in the saline soil of the site. Traces of red paint, as a decoration, were found in the interiors of the trefoil ornaments of the shawl of the figure in Pl. XCVIII, but possibly only the dress was coloured. In this particular case a thick paste was used, and not merely a wash.

Finish. The surfaces of the statues of limestone and alabaster were not particularly well finished; they can be described merely as smooth. It is possible, however, that damp has destroyed any polish that may once have existed.

Broken condition. From their appearance these images seem to have been purposely smashed. We find both bodies and heads, but never the two together. Not one statue has been found that could be completely restored. Who did this obviously intentional damage we have not the means of knowing. It could hardly have been an alien people who drove out the inhabitants of Mohenjo-daro and occupied the site, because we should have found traces of their occupation; and even if their habitations had all been destroyed by denudation, the objects contained in them should have been found at the foot of the mounds.

We have already spoken of the hiatus that occurred between the desertion of the city and its partial occupation during the Kushān period. A certain amount of destruction was done by the people of the Kushān period in their search for bricks to build the stupa and its surrounding buildings. Possibly statues were found in this dismantlement, but it was very much against the practice of the Buddhists to destroy images of this kind. Even if we can suppose that statues were broken up in Kushān times, this would not account for the mutilated statues found in the lower levels, which must have been speedily covered by débris when the site was deserted by the Indus Valley peoples, and which were not disturbed in the later search for brick.

[1] In some respects this kilt resembles the modern *dhoti*. Whether anything else was worn beneath this lower garment we have no knowledge.

[2] From the draping of the figures there can be no doubt that the garments were of thin material—probably of cotton, as we know that this material was in use during this period. But there is little reason to doubt that the poorer people at all events dispensed even with these simple garments in the heat of summer, if the clay figures are any criterion. The upper garment resembles those of other countries. In Babylonia a garment was frequently worn from the waist (*kaunakès*), and sometimes, in addition to it, a shawl under the right and over the left shoulder. Archaic female figures always had the upper part of the body covered. In Egypt a garment was worn over a vest in very early times, though the plain kilt hanging from the waist was also popularly worn by rich and poor alike.

[3] Fillets to keep the coiled-up hair in place at the back of the head were worn in Sumer until at least 600 years later than at Mohenjo-daro. Smith, *Early History of Assyria*, pp. 78 and 79, and pl. x. See also *The Antiquaries' Journal*, vol. viii, No. 4, pl. liv, for a much earlier example. Langdon, *Excavations at Kish*, pl. vi.

Portraits (?).

A striking feature of these heads is the dissimilarity of the faces, which argues that they were intended for portraits. They are certainly not of a uniform type, as one would expect in statues of deities. On the other hand, these heads were probably the work of separate sculptors who would naturally have produced the type of face that corresponded with their ideas. Again, that more than one god or goddess is portrayed is, of course, quite possible. If, as I suppose, figure No. 4 in Pl. C was a grotesque, it could never have been intended to represent a private individual, but might well have represented a conception of a particular god.

In those countries where votive statues are common, they are usually of more or less good workmanship, for the reason that the sculptor had opportunities to perfect himself by practice in the portrayal of the human form. On the other hand, if statues were made only of deities for temple purposes, for which the demand would be very limited, the work produced would probably be of a poor description. Apart from statues, the sculptors at Mohenjo-daro had little experience in the carving of stone. This and the lack of stone itself would be quite enough to account for their inability to express the human form in that material.